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[NO. II.

A Systematic Bandage for Fractures of the Lower Jaw, &c. By
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FRACTURES of the lower jaw are a subject so well understood, and the indication so strongly point out the mode of treatment, that the usual plan would at first suggest itself, as it were, intuitively, to almost any practitioner in surgery; but notwithstanding the apparent simplicity in the management of this fracture, there are several considerable objections, which future experience points out to us as attendant on the ordinary method of bandaging the lower jaw. In the first place, it is very difficult to apply, in the usual manner, a roller over two surfaces so irregular in their size, shape and relative positions, as the head and chin, and by it maintain a firm and equal pressure backward and directly upward against the teeth of the superior maxillary bone, especially in some particular shaped heads. Secondly, when the bandage is thus applied, the slightest derangement of it, will so loosen the whole, as to do away all the advantages to be derived from it. A third inconvenience arising from it, is that the ears, being so near the

seat of injury, are covered, on either side, by the bandage, thereby subjecting the patient, in addition to his other sufferings, to temporary deafness. The greatest objection, however is, that the ears, by the continued pressure of the bandage against them, frequently become excoriated ; and when this is produced, it not only occasions much suffering to the patient, but demands great attention from the surgeon to prevent its increase ; and in some cases he is obliged to renew the dressing daily, to avoid ulceration.

These inconveniences, it is believed, may be entirely obviated by the systematic bandage delineated in the annexed plate. This plan suggested itself to me more than three years since, during my residence in the Pennsylvania Hospital. Whilst house-surgeon, frequent opportunities were afforded me of employing it in the ordinary cases of fractures, and with uniform success.

Dr. Physick, two winters since, in lecturing on this subject, spoke of the inconvenience arising from the usual mode of bandaging the lower jaw ; and at my exhibiting the present one to him, he approved of it, and has, since that period, done me the honour to recommend it in his public lectures.

Although this bandage is employed more particularly in fractures, it will be found also very useful in other cases,* and particularly, to retain dressings on the chin and face, since by a little variation, that part of the roller which now passes over the chin may be turned around the upper lip, or if necessary, alternately across both.

DESCRIPTION.

With a roller, an inch and a half or three quarters wide, commence just below the prominence in the *os occipitis*, continue it obliquely over the centre of the parietal bone, across the juncture of the coronal and sagittal sutures, over the zygomatic arch, under the chin, and pursuing the same direction on the opposite side until you arrive at the back of the head, then pass it obliquely around, and parallel to the base of the lower jaw, over the chin ; and continue the same course on the other side, until it ends where you commenced ; and repeat.

* In April 1816, William Shields, a boy of 8 years of age, struck the two upper incisors of his permanent teeth, against the back of an axe. The

On Dysmenorrhœa. By Wm. P. Dewees, M. D. March 18, 1819.

IT is a matter which justly challenges surprise, that this painful affection of the uterus should have attracted so little notice from the earlier writers on medicine; and we cannot help feeling it a reproach that, almost the whole of the later medical authors are involved in the same charge of supineness towards a disease which merits a most serious consideration. Was there no other inducement to the study of *Dysmenorrhœa* than to relieve pain, we should hold it sufficient; but there is a much higher motive connected with it; for when relieved, the married woman who was by its continuance doomed to barrenness, becomes fruitful, and performs the duties of her creation. It was not until the time of Doctor Denman, that this complaint attracted particular notice; and it is to him, we are chiefly indebted for its history and real character.

Dr. Fothergill, it is true, has vaguely noticed it,* and Dr. Cullen has given it en passant à place in his "First Lines," but neither has adverted to its most remarkable attendant, the discharge of a membrane. Dr. Denman appears to be the first to have considered this substance as constituting in part the disease. He has given a short, but clear account of the escape of this substance from women who menstruate with difficulty. Morgagni † however, long before him had given a very remarkable case of this kind, which has not been noticed by the Dr.; it must have escaped his notice or his recollection, or he would not have failed

person who brought him to the hospital, came holding one of the teeth in her hand, whilst the other remained half within its socket. After carefully rinsing the dirt from the one which had fallen on the ground, I replaced them both, and kept the lower range of teeth firmly bound to the upper, by means of this bandage. He was afterward admitted as a patient, nourished for some weeks on fluids alone, and finally discharged cured. A twelvemonth after this period, I saw the boy with both of these teeth in his head, though one of them did not appear to be so firm as it originally had been, from its having lost its anterior portion of the gum when the accident happened.

* Works P. 468.

† Epist. xcvi. Art. 12.

to cite it, as it is one of the most extraordinary instances of this kind upon record.

But, although Dr. Denman has noticed the formation and escape of this deciduous substance, yet he has not attempted to give an explanation of its formation, or the consequences to which it gives rise. He merely states that "the pain is to be attributed to an increased degree of irritability in the habit, or to the difficulty with which those vessels designed for the menstrual discharge, became permeable," which in fact, is saying nothing; for a mere increase of irritability does not necessarily imply an increase of sensibility; and "the difficulty with which those vessels designed for the menstrual discharge to become permeable," gives in our opinion no adequate idea of the cause of the pain which attends this disordered discharge, nor is it the cause of it.

Nor can we regard Dr. Fothergill's explanation as superior, although Dr. Denman thought it sufficiently important to almost copy it. Dr. F. says "this excruciating pain seems to be spasmodic, and to proceed from the extreme irritability of the uterine system: The blood naturally determined hither, in order to its being discharged, by distending the very irritable vessels, occasions the the spams; this produces a constriction of the vessels; they became impervious, and the nisus to the discharge continuing, the pain becomes exquisite and general, till the patient, worn out with the struggle, is debilitated and sunk; the fluids are then dismissed, some ease succeeds, but the patient is often so reduced as not to recover her usual strength before she has another conflict to undergo. §"

Dr. Fothergill has however remarked one striking feature in this complaint, namely its disqualifying the woman from becoming a mother, he observes, "it would seem as if the uterus itself was so for a sufferer as to be rendered by degrees less fit for fecundation. I think it has been observed by other Physicians, as well as myself, that few of those who have suffered much in this manner here described, have borne children." †

§ Works P. 468:

† Works p. 469.

We shall endeavor then, to give an explanation of this distressing condition of the uterine system upon very different principles. In prosecuting our enquiry, we shall first notice the history of this complaint; second, attempt an explanation of the formation of the deciduous membrane; third, account for the pain which invariably attends its discharge.

This complaint for the most part commences, in women who are obnoxious to it, with the first menstrual periods, and unless prevented, most pertinaciously continues at every subsequent return of the Catamenia.* We have never observed any particular constitution or temperament especially liable to it. We have witnessed it both in the delicate and robust; in the sanguineous and the phlegmatic. The discharge commences sparingly for some time, and is then for a short period, almost altogether arrested; so soon as this happens, pain is felt, and this returns and intermits like the pains of labour—after a continuance of these alternate pains for an uncertain period, relief is sometimes suddenly experienced, and there is found discharged from the vagina a membranous substance, of uncertain size,—sometimes it resembles when spread out the form of the uterus; at other times it is broken into fragments, but always maintains its membranous texture.† So soon as this membrane is completely thrown off, the woman is relieved, unless there be a fresh production of this substance to stimulate the uterus to new exertions, and to new torments; this is by no means unusual, and several days are sometimes employed before these efforts cease—at other times a few hours are all that is required to restore the woman to tranquility. It is remarkable that, the quantum of pain is not always in proportion to the quantity of membrane discharged—we have seen extreme torture from a very small portion, and less pain where the deciduous product was considerable. But this is not difficult to account for.

* The woman may however become subject to this complaint at any period almost of the menstruating time of life. I have in more instances than one known it to follow abortion.

† Dr. Denman declares this membrane to be smooth on one side and flocculent on the other; and this observation is confirmed by my friend Dr. Horner, who kindly examined a portion of it for me.

The virgin and the married woman are equally the victims of this distressing complaint. We have known it to commence immediately after marriage where it had not previously existed; and on the other hand, we knew it once to cease after this consummation.

Beside the alternate pains which we have just noticed, there is almost always a distressing aching in the back and hips, and which almost invariably announces the approach of the period; nor does this cease, in many instances, until two or three days have elapsed after the catamenial flow.

Having thus rapidly given the history of this complaint, we will endeavour to account for the formation of the membrane.

It seems now to be a fact generally admitted that, the menstrual fluid is the product of a secretory process. I taught this doctrine in my first course of Lectures on Midwifery in the winter of 1796-7 and at the time believed it was original with me; but upon mentioning the theory to my friend Dr. Physick he informed me that it was taught in London by Dr. Clark, who gave the credit of it to Mr. John Hunter. I was lately informed it was first suggested by the celebrated Bordeu; but from the hasty glance I gave his chapters on the glands and menstruation I could not discover it—it may however be in his works.

Be this as it may, we have strong evidence that the blood after it is thrown out by the uterine vessels is very much changed from the common mass of this fluid. It differs from it in the following particulars. 1st, It is thicker. 2d, It does not resemble it in smell. 3d. It is much darker coloured. 4th It never separates into its constituent parts. 5th, It never coagulates. 6th It is said to be nothing like so susceptible of the putrefactive process.

From this it would appear, that the coagulating lymph receives a new modification during its transmission from its vessels to the internal cavity of the uterus, since it no longer exhibits its common property of coagulation when exposed; and this circumstance becomes a test, that the uterus is performing its menstrual duty properly; and, on the contrary, when this does not obtain, it marks a diseased condition of this viscus.

It may be asked, why this change in the coagulating lymph should be necessary? we answer, it is a wise and kind provision; and that, the peculiar process by which it is formed, is in our opin-

ion chiefly directed to this end. And to effect this, nothing more is required than a specific arterial action ; for this kind of change takes place in many instances in the general circulating mass from some peculiar impression on the sanguiferous, or perhaps nervous system—thus in yellow fever, scurvey, death from a blow on the stomach, or electricity, passions of the mind, inordinate exercise, &c. we have dissolved blood as it is termed, or blood which does not coagulate.

For the purpose of operating a change on the coagulating Lymph, the process of secretion is instituted, or at least the blood designed for the menstrual discharge is subjected to the action of certain vessels, whose office is to deprive it of the power of coagulation, and in the healthy state of the uterus, this act is faithfully performed. And we believe that this is the principle change that the blood undergoes, and this for the benevolent purpose of exempting the female from the long continued pain and suffering that would necessarily ensue, did not the uterus perform this kind and friendly office. Did the blood retain the property of coagulation, the life of the woman would truly be a life of misery as at every menstrual period she would suffer the miseries of a labour ; the blood would coagulate within the uterus, and this viscus would be urged to contractions of the most painful kind to throw it off; and no sooner would it have achieved this desirable end, than a fresh and similar duty would be imposed upon it, and would thus continue until the period should have passed over. And in cases of imperforate Hymen, what would not the poor woman be doomed to suffer from the same cause ? but here, a kind providence interposes, and by the arrangement of the menstrual blood remaining fluid she escapes from the misery that its coagulation would produce.

Since then we can show a direct advantage in the menstrual blood remaining fluid, is it not more than mere conjecture to say, that as this change was an important one, that the process of secretion was instituted with the express intention to impose this alteration on the coagulating lymph ? we are ourselves decidedly of this opinion. An opinion which, however at variance with many respectable authorities, is well supported by facts, and the phenomena of menstruation. Did no advantage result from the change we have been contending for, it might be idle or unimportant to insist

on it; but, as it is a remarkable circumstance in the history of the menstrual discharge, that, *in a healthy state it never coagulates*, we have thought proper to insist on this peculiarity as evidence, of a change of a notable kind. And that this change can only be the result of a secretory process.

It has been said* that the menstrual blood is prevented from coagulation by its admixture with the mucus it may meet with in the vagina. But this is purely conjecture. It never has been proved by direct experiment; nor is the mean in our opinion sufficient for the end. In the case of imperforate hymen the menstrual discharge remains fluid; this perhaps has been collecting many months; and as it is entirely confined to the vagina and cavity of the uterus from the first period of its secretion until it may be discharged by art, and without being subjected to any conquisitory motion to incorporate it with the mucus secretion of these parts, we cannot see how mere contact with it, should so change the lymph as to prevent its coagulation.

Having (we trust) rendered it more than probable, that the fluid thrown out at the menstrual period is the product of a secretory process; and that this process is instituted with the view to deprive the coagulating lymph of the power of coagulation; and that when this secretion is healthily performed this end is uniformly affected; let us advert to the consequences that would follow, supposing that from some cause or other, an interuption is given to this healthy condition of the uterus: it would seem, under such circumstances to follow as a consequence that, the fluid discharged would differ from the product of a healthy and well established secretion. The process would be imperfectly performed, and the required changes would not be completely induced† the coagulat-

* Mauriceau, Haller, &c.

† It may be questioned by some, if the menstrual fluid be a secretion, whether there is any coagulating lymph in this discharge, since it does not manifest itself by this power, and consequently if it be the case that, there is no coagulating lymph in the menstrual fluid the explanation we offer must necessarily fall to the ground to a supposition of this kind we would answer, that the presence of the lymph is rendered more than probable, first, from, in every instance where the experiment has been tried, where the red globules of the blood were found, the coagulating lymph has been proved to accompany them. 2d That, as there is in *Dysmenorrhœa* almost

ing lymph would not be entirely deprived of its usual or common capacity, consequently the menstrual fluid would be imperfectly elaborated ; so soon then as this fluid is eliminated from the secretory vessels it will begin to separate into its constituent parts, the colouring matter will separate from the imperfectly subdued coagulating lymph, and will, from its superior density occupy the lower or most depending part of the uterine cavity and will sooner or later make its escape, while the coagulating lymph will remain either altogether or in part to spread itself over the internal face of the womb, and will, as it is wont to do when in contact with living parts, quickly assume the appearance and density of membrane.

This membrane will be to all intents and purposes an extraneous substance to the uterus, and will consequently stimulate it to the effort of throwing it off, which will be eventually effected by the institution of alternate contractions ; and *hence the pain* during this process.

Invariably a casting off of a membrane, it proves the existence of the coagulating lymph, since we know of no other fluid of the human body capable of producing a membrane like substance. Besides, were it ever to be proved that in the healthy secretion of this fluid there is no coagulating lymph, still it would not disprove the explanation we offer of the membrane, as Dysmenorrhœa is occasioned by a diseased or vitiated state of the secerning surface of the uterus, consequently, this part may perform its function so imperfectly as to allow of the escape of the coagulating Lymph, and this may and most probably does exert its unsubdued powers so soon as it escapes from the uterine vessels.

[For the following communication, we are indebted to Dr. THOMAS MIFFLIN HALL, of this city, late surgeon of the ship Bainbridge, on a voyage from Philadelphia to Calcutta.

Remarks on the Cholera Morbus of Calcutta.

HAVING lately had an opportunity of witnessing the ravages of one of the most destructive diseases that has ever appeared, I may perhaps, be able to offer some remarks on it, not altogether useless to my professional brethren ; and connected as it is with the commercial interest of our own country, afford some useful hints to the merchants concerned in the India trade.

During the years 1817 and 1818, a species of cholera, the most violent and uncontrollable, ravaged the provinces of Bengal. My personal knowledge was confined to the last mentioned year, and probably it then appeared in its greatest malignancy ; but whilst I was in Calcutta, I understood that it had also prevailed in the two former ; yet but little, as far as I know, has been said of it here. It first made its appearance at the season of the rice harvest, and from its rapid dissemination throughout the country and amongst all ranks of people, some general cause was sought to which it might be ascribed.

No material difference was observed between the temperature of the air, rains, or other natural phenomena of these and preceding years.

As the crops of rice were very plentiful, and rice formed almost the only article of food to a great proportion of the inhabitants of that country ; and from the circumstance, particularly, of many being attacked immediately after a hearty meal of the *new* rice, the disease was, by some, attributed to the use of this article.

This opinion appeared to be plausible ; and a stranger in the country, would be very apt to adopt it, when he sees the immense quantity of rice that a Hindoo can eat at one meal.

But one great objection is obviously opposed to it. They have put their sickles into the yearly harvest from time immemorial, and they made no greater use of rice during this season, than they had in former years.

Why then should a disease, making its appearance at this time, be ascribed to a cause which, for centuries, had been in existence? No satisfactory explanation has been given of its origin. I shall not, therefore, employ my time in fruitless speculation, but proceed to such information as my own experience and the communications of others, enable me to give.

The disease made its attack without any previous warning, and ran through its different stages in the same abrupt and rapid manner.

A violent vomiting was generally its commencement, soon followed by copious liquid evacuations by stool.

The vomiting was the most violent and frequent at first. The matter thrown out contained much bile, generally of a dark colour. In the course of a few hours, the vomiting became less frequent, and the matter, consisting almost entirely of bile, less in quantity. Food rejected in the first paroxysms of vomiting, appeared to have undergone no change, although it had been several hours in the stomach.

By the time that the stomach had become emptied by three or four vomitings, the discharges *per ano*, commenced. The stools were at first soft, of a light yellow colour, and copious. During the course of the disease, they became fluid, black, and small in quantity, and at last changed to a colourless watery matter, resembling very much the water in which greasy dishes had been washed, at which time the patient voided them involuntarily.

I have never witnessed, nor do I recollect ever to have heard of a case which terminated favourably after the stools had assumed this last mentioned appearance. I think it may be given as a certain symptom of a fatal termination.

The effect which this disease produces on the patient, in the course of five or six hours, from its commencement, is truly astonishing; urged rapidly to dissolution, he frequently exhibits in this short time, the appearance of one in the advanced stages of consumption; nor is its abrupt attack less a matter of wonder. I have seen cases, in which the patient had arisen in the morning, and commenced his daily occupation in all the vigour of health and appearances of good spirits; but ere the shadows of evening began to lengthen, he lay an emaciated corpse.

Such a rapid and decisive career was only to be checked by the most prompt and violent remedies; and the insurance of success, required a bold confidence in the physician, which at other times might be highly reprehensible.

The most active stimuli, applied in all the various forms which the most fertile ingenuity could invent, seemed to be indicated, and indeed were the only remedies that effected any change. Tincture of opium, brandy, ether, spices, &c. internally, and mustard, hot spirits and frictions externally, carried to an extreme, became the only hope of the practitioner.

I uniformly observed, that when from the timidity of the physician the tinct. opii. was administered in common doses, and even frequently repeated, the disease terminated fatally. It required a powerful application to produce the slightest perceptible effect.

This disease was not entirely confined to the natives of Bengal. Many Americans and Europeans, recently arrived in Calcutta, fell victims to it. Some vessels, indeed, lost nearly one half of their crews. Europeans, who had resided for a considerable length of time in the country, did not appear to be liable to its attack.

The deaths among the natives of Calcutta, I have been informed, have amounted to the number of 700 in one day, from Cholera Morbus. Five hundred was a number not uncommon. No doubt this great mortality arose more from the prejudice of the natives against the use of proper remedies, than from any peculiarity of constitution. Their religion interdicts the use of spirituous liquors, and so great is their fear of transgressing any of its laws, that I have seen cases where a certainty of death has been preferred to the infraction of that which denied them the use of remedies containing alcohol. I was never able to prevail upon one of them to take laudanum and brandy, but in one instance, in which the patient, being one of my servants, without listening to his objection, that he would "lose his cast," I separated him from his companions, and gave him his choice, either of brandy or *bamboo*. He preferred the former, and I had the satisfaction of seeing his disorder checked, and his health, by subsequent treatment, restored.

The first case that fell exclusively to my management, was that of a robust, hearty sailor, an Irishman. I saw him about the third or fourth hour from his first attack; he was at this time delirious,

and excessively weak, from the effects of violent vomiting. I immediately gave him about 300 drops of tinct. opii. mixed with about four ounces of brandy. I was previously acquainted with his predilection to *strong drink*, and of course expected less effect from stimuli in his case, than I would have done in that of a temperate man.

This dose had but little *immediate* effect. In the course of half an hour, I gave him 200 drops more, in about the same quantity of brandy as in the first instance. Immediately after the first dose, I applied flannels soaked in hot spirits, over the abdomen, and kept them sufficiently warm to be in a slight degree painful. As I found it difficult to arouse him from a comatose situation, I persisted in this plan as far as I thought it would be productive of any effect, and made the addition of sinapisms. In the space of three quarters of an hour, he had eight convulsions, each succeeding one less severe than the preceding. I left him after an hour's attendance, having given him at different times, at least 700 drops of laudanum and about twelve ounces of brandy, in a composed sleep and free perspiration. On the next day he walked about the ship, complaining of nothing more than loss of strength, and a slight degree of giddiness.

It is evident, that some such active treatment is the only method that can be pursued with advantage or safety, for two reasons.

In the first place, the unsettled state of the stomach would not permit a medicine, slow in its operation, to remain a sufficient length of time to be productive of any effect; and, secondly, if an impression was not made on the system within a short space of time from the commencement of the attack, the disease proceeding with such rapidity, would soon hurry the patient beyond the reach of the most potent remedy.

I saw no case of a relapse after the patient had survived the first attack. The remaining weakness wore off in a few days, and the patient seemed to require no extraordinary care subsequent to the first day's treatment.

As a preventive, I know of nothing better than the use of stimulant food, and a moderate quantity of spirituous liquors. Sailors, after a long voyage, are very fond of fruit and vegetables, and in warm climates are apt to use more of them than is conducive to health.

In Calcutta, the indiscriminate use of vegetable provisions, is certainly pernicious. There is also another article very prejudicial to health, much used by sailors ; that is the execrable liquor called *Bengal rum*. This spirit, when freely drank, often produces a degree of madness ; and is at all times exceedingly hurtful. To prevent the use of it, and other bad liquors, (for neither advice nor authority were of themselves sufficient,) and to give vigour to the stomach, I prepared for the use of the ship to which I was attached, a quantity of tincture of gentian, and caused two or three glasses of it to be given to each man, daily. After I had adopted this plan, I had not a single case of cholera, while other vessels were losing men daily. The tincture of gentian is a very convenient way of administering a tonic : the sailors became so fond of it, that instead of requiring to be watched and punished for neglect, as is generally the case, when they have to take medicine, they came for their *bitters* regularly at the stated periods, and expressed much regret when the time arrived that its use would be no longer necessary.

I am confident that my success in bringing away the whole crew of the ship Bainbridge, alive, from Calcutta, was owing, in a great measure, to the use of that article as a preventive.

From this view of the incessant care that is requisite to preserve the health of our seafaring men, as well as the absolute necessity of medical advice in the earliest stages of disease in that climate ; the great danger to which their lives are exposed, without an attending surgeon to every ship, is perfectly obvious.

In many such cases, those who have the direction, do not think it worth while to incur the expense of a visit from a physician, while it is yet probable that the patient may recover without his assistance : and indeed, should they send for one, other engagements may prevent him from attending, or even from receiving any notice of the application, until it is too late. For one or two hours' delay in a case of the disease under consideration, may prove fatal.

On the Absorption of Carbonic Acid Gas by Water, and Solution of Magnesia. Communicated by Dr. T. MIFFLIN HALL.

WHEN we bring carbonic acid in contact with water, it loses its elasticity, and is absorbed. The quantity absorbed by any given quantity of water, depends upon the temperature, and the pressure to which the gas is subjected.

Dr. Henry has given much attention to, and made many experiments upon the subject of absorption of gases. His experiments on the absorbability of carbonic acid, have led him to adopt an erroneous theory. It is his opinion that water will absorb a certain bulk of that gas, independent of the quantity condensed in that bulk. For instance, supposing 100 cubic inches of water to be capable of absorbing 100 cubic inches of carbonic acid gas, under the pressure of the atmosphere, 200 cubic inches would be absorbed by the pressure of two atmospheres, 300 by three, and so on. According to this doctrine, water would absorb the gas ad infinitum, as its absorbing power does not relate to quantity of matter, but the bulk or space which that matter occupies.

This doctrine is not correct—there is a definite quantity of carbonic acid gas that saturates a given quantity of water, and increase of pressure, although it causes a greater quantity of gas to be absorbed, yet not in a direct proportion. Nor does water take up each additional quantity of gas as the pressure is increased, with the same facility. If, for instance, 100 cubic inches of water will take up 100 of carbonic acid gas, under the pressure of 15lbs. to the square inch, it will not absorb double that quantity of matter, or 100 cubic inches under the pressure of 30lbs. nor will the additional quantity which it does absorb, under an increase of pressure, be taken up in, proportionably, the same period of time as a former.

Dr. Ewing has made an experiment relative to this matter, the result of which, we think conclusive. As it was conducted on a large scale, it was not liable to errors arising from want of accuracy in measuring small differences in quantity of matter and pressure.

Ten gallons of water were put into a tinned copper vessel, of the capacity of twenty-three and a half gallons; leaving, of course, a bulk of thirteen and a half gallons occupied by air.

The temperature of the water was about 58° of Fahrenheit, that of the air of the apartment 64° . Two hundred and three gallons of carbonic acid gas, were forced into it, the first day; on the second, forty; on the sixth, seven; and on the seventh day, a further addition of ten gallons was made. At every addition of gas, the pressure on the internal surface was raised to the extent of twelve and a half atmospheres, but reduced by subsequent absorption, until the last addition, which kept the pressure permanent. There was at this time two hundred and seventy-three and a half gallons of air: i. e. two hundred and sixty of carbonic acid, and thirteen and a half of atmospheric air, forced into the space of thirteen and a half gallons, supposing no absorption to have taken place. The pressure would then have been equal to twenty and a quarter atmospheres. Consequently, according to Dr. Henry, the water should have absorbed two hundred and twenty-five gallons of the gas, (making the proper calculation of the reduction of pressure by the gradual absorption) and reduce the pressure to six and a quarter atmospheres. This, however, was not the case. The permanent pressure indicated by a very perfect and delicate instrument, the sthenometer, was equal to twelve and a half atmospheres; consequently, one hundred and sixty-nine gallons of gas were unabsorbed, as will be evident from the following demonstration:

We have, in the vessel, a space of thirteen and a half gallons occupied by gas. If we force into it thirteen and a half gallons more, equal to twenty-seven, the pressure will be equal to two atmospheres, thirteen and one half additional, equal to three atmospheres and so on, until we arrive at the number of gallons, one hundred and sixty-nine, when we will find the pressure to be equal to twelve $\frac{4}{7}$ or twelve and a half atmospheres, one hundred and sixty-nine subtracted from two hundred and seventy-three and a half (the whole quantity of air in the vessel) leaves one hundred and four and a half, the quantity absorbed; which, according to Henry, ought to be the quantity absorbed under a pressure of only ten and a quarter atmospheres.

Water, when containing ten times its bulk of carbonic acid gas, in other words, as much as it will absorb under the pressure of one hundred and eighty pounds to the square inch, (about twelve atmospheres)-is capable of dissolving a much larger quantity of

carbonate of Magnesia than is soluble in pure water. According to Dr. Thompson, one part of the carbonate of Magnesia in powder, is soluble in four hundred and eighty parts of water. Dr. Ewing has succeeded in dissolving more than eight times that quantity, by means of the impregnated water under the above-mentioned pressure. This solution yielded crystals, which were not again soluble in any considerable degree, in water.

Carbonate of Magnesia, when subjected to this process, receives an addition of carbonic acid, and would therefore be more properly termed super carbonate. The super carbonate retains its acid with so little tenacity, that it is decomposed by the rays of the sun, and is reduced to the state of insoluble carbonate.

The solution of Magnesia, although it contains so small a quantity of the earth, is active as a cathartic, affording us an explanation of the hitherto inexplicable anomaly of the great purgative powers of the natural mineral waters, which contains so small a portion of Magnesia.

It is now evident that the cathartic power of that medicine is greatly increased by solutions previous to exhibition; in other words, it exerts its power in the greatest degree of perfection, only in the state of solution; and that the natural mineral waters do not owe their purgative properties, as has been supposed, to some unknown ingredient, or mysterious quality communicated to them in the bowels of the earth.



A case of colic attended with obstinate constipation; relieved by the effusion of cold water. Communicated by Jesse Magaw, M. D. Mercersburg, Pa. 5th March, 1819.

THE following case may be deemed somewhat singular and interesting because it resisted the remedies usually administered in such cases; and yielded suddenly and instantaneously to the application of cold water externally.

J. B. the subject of this communication was of a spare habit of body and about thirty years of age, had frequently had attacks of pain in his bowels, which were relieved without difficulty by the common means. For some years he had been troubled with an inguinal rupture which was reduced with ease as often as it protruded. On the afternoon of the 3d July 1815, (18 or 24 hours from the commencement of the attack, if I recollect aright) I was called to see him; he complained of severe pain about the umbilicus;—had frequent vomiting and now and then hiccup;—a portion of intestine was protruded into the scrotum.—Previous to my visit he had taken some trifling remedies; among others castor oil to purge him, which he immediately rejected from his stomach—As his pulse was full and quick, as there was considerable soreness upon pressure over the abdomen, and as the disease had existed some hours previous to my visit I was apprehensive that intestinal inflammation had commenced, and supposed that the lancet freely used would be the most serviceable remedy.—In the course of the afternoon and night succeeding, he was bled four times in the quantities of from 12 to 16 ounces, at each bleeding; though without any considerable or permanent alleviation of the symptoms. Aperient medicines were administered in large quantities but were for the most part vomited: they were such as castor oil, jalap and calomel, and calomel alone, which last remedy was given to the extent of one hundred grains in the form of small pills, some of which were retained on the stomach and some rejected from it; in addition to these purgatives enemata were used; but without the effect of opening the bowels. The warm bath which in such cases is frequently a soothing remedy; although twice used, was of no real service.—The pain and constipation remained, the hiccup became more dis-

tressing, and recurred at shorter intervals ; the vomiting still continued :—a large blister was applied over the stomach, which had the effect of relieving the latter symptom. In the mean time, frequent attempts, after he came out of the bath, and at other times, were made to reduce the rupture, which I supposed contributed to keep up these distressing symptoms ; but it resisted all my efforts, the part was so distended with flatus. In this hopeless and deplorable state, I resorted to enemata of a strong infusion of tobacco, but without relief. This produced nausea, but did not bring on vomiting, so powerfully had the blister overcome the irritable state of the stomach ; nor was any medicine that was taken after the action of the blister, rejected from the stomach.—On the morning of the 4th, finding my patient not relieved from pain, and the costiveness still continuing, I resolved to try the effects of quicksilver, in opening the bowels ; but that article could not be procured, after the delay of several hours. Upon the point of abandoning my patient to his fate, I left him ; allowing him, during my absence, to take small doses of cathartic medicines at stated periods. Having often read and heard of the efficacy of cold water as an external application, in cases attended with obstinate costiveness, I visited my patient again, with a determination to try it, although I had no sanguine hope of succeeding ; yet still I hoped that it was a remedy which might give relief in this case. The patient being placed in a large tub, his abdomen being exposed, I dashed two large buckets full of cold spring water over his naked belly, in quick succession ; his belly by this time was much distended by flatus ; but so sudden was the retraction of the abdominal muscles, that he immediately called for the close-stool, and had a very copious evacuation of fœces, at the same time expelling much wind :—the tumid belly subsided, the pain suddenly left him, and the ruptured portion of the intestine receded within the abdominal ring :—the pain, to use his own expression, went downwards, from the middle of his belly ; from henceforward, he recovered :—his bowels were kept open with pills of aloes and calomel. A sore mouth soon succeeded, from the large doses of calomel he had taken. The hiccup continued for some days, but wore away gradually.

As this case is drawn up from memory, and as I have but a trifling memorandum of some circumstances which has brought to

my recollection, the most prominent features of the case ; the remote or exciting cause, has escaped my memory, which doubtless would throw some light on the case.

This case, at the commencement, might have been nothing more than flatulent colic, but costiveness and pain continuing for some time, might cause the intestines to become inflamed ; it is on this supposition, where pain and costiveness has existed for a considerable length of time, that we are advised by most writers to draw blood, that inflammation, or its consequences, may be averted. Upon this principle, bloodletting was resorted to in this case, although it did afford temporary relief ; and the pain soon recurred, because costiveness still remained ; yet I am convinced that it was of service in preventing inflammation, and perhaps death. Another cause may account for the continuance of pain : combined with costiveness, the air confined in the bowels, kept them in an over-distended state, so that their peristaltic motion could not be re-excited by purgatives, their action being already overcome by the stimulus of distention : this being the case, nothing could excite them, except a strong, and sudden impression made upon the skin, which, as a very illustrious physician has observed, acts as an antagonizing muscle to the bowels ;—thus through the medium of the skin, the bowels may be excited by sympathy :—Or, the insensible perspiration, which might have been considerable in the reduced and relaxed state of the system, might on the sudden application of cold, be driven forcibly to the bowels, and cause them to act upon their contents : hence the external application of cold to the surface of the body, or cold wet and damp feet, frequently brings on diarrhoea : or the shock which the cold water gave to the system, may have imparted tone to the over-distended bowels, by causing the abdominal muscles to contract upon them :—thus their peristaltic motion was assisted, and they were enabled suddenly to expel their contents.

• Whether the effusion of cold water would have succeeded without previous bloodletting, I will not venture absolutely to deny ; but I am inclined to believe that the practice would have been dangerous, in consequence of the excited state of the system, and intestines especially, and that it was not admissible until the action of the blood vessels were reduced.

The external application of cold water, in cases of this kind, is by no means recent, I believe the remedy has been used long since ; —but in country practice, it is perhaps novel and unpopular ; as most persons, in such cases, are apprehensive of increased danger arising from the application. Contrasted with other remedies, it is difficult to ascertain its comparative success, as popular prejudice runs high against it. I have since had frequent opportunities of using the remedy in similar cases, but was prevented from it by the fears of my patient.

In the case related, the salivation must have contributed much to the recovery of the patient ; but only a slight impression had been made on the disease, until he was subjected to the cold effusion.

On the Disease produced by the Action of the Canine Virus on the Human Body. By JAMES MEASE, M. D.

THE disease produced by the action of the virus of a rabid animal of the Genera *Canis* and *Felis*, may be justly stiled the *opprobrium medicorum*: for notwithstanding the length of time that has been known, the numerous works written upon it, and the various modes of treatment pursued, we every year, see or hear of instances of death from it. So long therefore, as it continues to baffle the skill of the physicians, it is worthy of investigation: and the advice which I gave many years since, on the subject, may, with propriety, be repeated; that is, to publish the history of every case, and treatment, whether successful, or the contrary, in order that we may adopt the remedies by which it was cured, or avoid those that failed. In the United States, the disease frequently appears; but has as yet *never been cured*. During the past winter, one case happened in Philadelphia: two years since, one occurred in Frankford, near Philadelphia: two or three in New England; last year, *four* in Richmond, Virginia. One case also occurred in Montreal, (Mrs. Bruneau) and all unhappily with the same result.

The cases in Richmond and Montreal, were particularly interesting to me, because in one of the former, the preventive treatment was adopted, which I many years since showed had so often failed, that it was not to be trusted; and the curative remedy that I have long since reprobated, was followed in the latter, with the same result which attended its use in almost every instance on record, in which it had been tried. The reader will, at once, refer my exception to those cases cured in Calcutta, by bleeding. Those in Richmond were doubly important, on account of the total failure of that disgraceful imposition, the *Chinese snake stone*, which I have noticed in Coxe's Medical Museum, vol. 5.

Abstracts of three cases that occurred in Richmond, Virginia. From Rice's Magazine, Richmond.

1. Edward Taylor, aged twelve years, was bitten on the 27th March, 1818, in the back of the hand, and in the palm, next the thumb, by a dog of the family, which had shown no symptom of madness, except an unusual degree of ill-nature. The dog was

soon tied, eat freely, and recognised the members of the family, giving the usual indications of affection, when kindly called. The wound was well washed in brine ; the *snake stone* was afterwards applied four or five times to the wounds, and was said to have performed its office perfectly well. The wound was also kept open for several weeks, and then healed.

On the 42d day after the bite, the boy began to complain. He was purged with calomel, and Glauber Salts. In attempting to swallow the solution of the latter, much difficulty was discerned, and he sighed continually. In drinking, the difficulty was not in swallowing, but in getting the water into the mouth : the lips then closed upon it. That once accomplished, the swallowing was perfectly easy. He made powerful efforts to resist the spasmodic motions produced by every attempt to receive liquids : complained of "the beating of his heart ;" heat considerable, pulse extremely rapid, but feeble. One hundred drops of laudanum, given in the course of a few hours, increased the restlessness, and aggravated the symptoms. He was perfectly sensible, and his naturally affectionate disposition was increased, towards his mother and relations. His eyes became so brilliant, as to require an effort to look him in the face. The symptoms became worse rapidly, and in twenty hours from the first appearance of Hydrophobia, his agony was over.

2. The second case is related by Dr. Henning, in the Richmond Inquirer, July 5.

James S. West, aged two years, was bitten on the 22d May, 1818, through the palm of the hand. The *snake stone* was applied, and stuck for some time ; it was applied a second time ; *lunar caustic* was afterwards applied, and also warm poultices. Mercurial frictions were used, and calomel given. The next day, the *eschar* produced by the caustic was removed, the wound dilated, and the caustic again freely applied : the wound was dressed with blistering ointment, and a poultice applied over it. By this treatment, the wound discharged freely for several weeks. A slight mercurial action was also produced ; when the mercury was laid aside, the wound filled up, and soon after healed.

The disease appeared on the 22d June, in the night. The symptoms were, starting in sleep, screaming, and pain in the head : agitation at the sight of, and buzzing of flies ; or by exposure

to a current of air, or the reflexion of its own image from a looking-glass (as usual.) An injection of fifteen drops of tincture of opium, was prescribed, and directed to be repeated until some effect was produced. Cold applications were directed for the head. The wound was again cauterised and five drops of laudanum given every half hour. Seventy-five drops had been taken by early the next morning, without any good effect, not even sleep. Perspiration flowed freely, and a frothy saliva issued from the mouth. The jugular vein was then opened, but before four ounces were drawn, faintness ensued, and the blood was stopped. Between 2 and 3 o'clock, P. M. the child died.

4. Abstract of a fourth case of the disease that occurred in Richmond, Virginia, in 1818. Related by Dr. Trent. *Richmond Inquirer*, Nov. 24.

The dog discovered no other symptom of the disease, than drooping and the refusal of food: the same dog, October 23d, bit a negro man in the naked fore arm; the dog was confined, and yet fondled on another negro man, Burwell, who approached him, submitted to be chained, and wished to follow him out. While caressing the man, the dog took the man's hand gently into his mouth, but without the slightest disposition to bite. In retracting his hand suddenly, he scratched his fore finger against a tooth. The dog died in forty-eight hours after the first appearance of indisposition, without discovering any other symptoms of madness. Slight indisposition took place on the 13th November, but on Monday evening, the 16th November, he was seized with a chill, high fever, and great thirst. The next day he complained of shortness of breath, pain in his left shoulder, slight head-ach, and lassitude; had no *aversion to fluids*; no pain in the wounded finger, which had healed soon after the injury; pulse preternaturally slow, soft and feeble; skin cool; tongue furred; took an emetic, which he drank with ease, and worked it off with plentiful draughts of warm water; it opened his bowels twice. In the evening feeling hungry, he attempted to drink some soup, but was seized with a spasm that threatened suffocation. The next day, his skin was cool, pulse irregularly frequent and slow; felt shortness of breath, and soreness from his throat to the pit of the stomach; surveyed his face in a glass with composure; drinking soon excited a violent spasm. Two abortive

attempts were made to bleed: took fifteen grains calomel, and thirty of jalap, in pills, with ease; blister applied along the whole course of the spine, another from his throat to the pit of the stomach.—more abortive attempts to bleed in the arm; in the two jugulars; the veins on the feet and ankles, and two temporal arteries; three gills only were obtained; blood thick and black, and never separated; skin too cool; blisters were applied to his fore arms and legs, and bottles filled with hot water, to different parts of his body. In the evening, lunar caustic was applied to the surface exposed by detaching two and a half inches of blistered cuticle on the spine of the neck; the pain from which, excited several fits of convulsive agitation; swallowed with ease ten grains of calomel, and three of ipecacuanha in two pills; took a second dose, which produced free perspiration, nausea and vomiting. The blisters produced stranguary. He asked several times for drink, but took it only twice, as it excited convulsive agitations. The windpipe was found morbidly dry. The stomach exhibited strong marks of inflammation; diaphragm very red. Dr. Trent remarks, that except the “inability to make a long breath, there was not a symptom which justified bloodletting; but supposes, that if he “had been seen, on Monday night, bloodletting to fainting, might possibly have saved him. Before the case was recognised as hydrophobia, the action of the heart and arteries was prostrated by the impress of the disease on the function of respiration, upon which their action depends.” He was sensible to the last, and shewed not the least disposition to do injury to any one.

The foregoing cases admit of several deductions, which it may be useful to state; and I notice them with the more satisfaction, not so much because they confirm some of the opinions and positions I first advanced in my inaugural diss. in 1792, and since, in other papers on the disease; but because they will illustrate the pathology of the disease, dispel error, and I hope thus lead to the cure of this hitherto almost unmanageable disease.

1. They show that the stage of the dog’s madness has no influence on expediting, or protracting the operation of the rapid virus on the human body. The dogs that bit the subjects of all the cases in Richmond, were evidently in the very earliest stages of the disease, as appeared by the inoffensive and friendly conduct of two of them: and in the case related by Dr. Hen-

ning, it is stated, that the dog bit the hand of the child, which he put out through the palings of the yard, as the dog passed in the street. Having bitten other dogs, and animals, "he was pursued with an intention to kill him, but *taking refuge in the house to which he belonged*, he was confined, and before he was killed, evinced unequivocal symptoms of hydrophobia." Now, dogs in the advanced stages of their disease, always run away from home, if not confined. It was formerly supposed, that the longer the disease had continued in a rabid animal, the more virulent was the poison contained in the saliva.

2. They prove satisfactorily, that the size of the wound has no influence upon the quick or tardy operation of the virus. It was formerly supposed, that the more virus was infused in the system, by the laceration of the dog's teeth, the more sudden would be the attack. The analogies of the small pox virus, and of that of syphilis, might have prevented the formation of such an opinion, and of its adoption, but they were overlooked. Numerous facts, now show its erroneous nature. In my remarks on the case of the boy YORKE, related by Dr. Physick, which I closely attended to, I have adduced several cases to prove the accuracy of the above deductions. See *New York Medical Repository*, vol. 5. p. 292. Yorke himself was one.

3. The third case related, shows also how fallacious all preventive remedies must be. The dog bit a negro man in the naked fore arm, and as yet has remained well; whereas a slight scratch on the forefinger by the dog's tooth, infused the virus that took effect in Burwell. Had the man first bitten, applied the Gloucester (Virginia) infallible the Chinese snake stone, (*risum teneatis medici*) or taken internally, any other reputed specific, a new proof would have been adduced of their salutary power in securing the system against an attack of the disease.

4. The foregoing cases, and many more recorded by myself, and others, prove the total inefficacy of the common preventive treatment by the application of caustics to the bitten part. Indeed, after the mass of evidence extant on this head, it is surprising that physicians would torture their patients with them, or place any reliance upon their capability of preventing the operation of the poison. At an early date of my attention to the disease, I was satisfied of their utter inutility, and decidedly ex-

pressed myself to that effect, in my inaugural dissertation. The subsequent publication of numerous cases, in which they have been used, under every circumstance favourable to their efficacy, viz. of speedy and severe application after the bite, have served to strengthen my belief in their inefficacy, and urge me to caution practitioners against placing the smallest reliance upon them. Dr. Henning gave them the fairest trial possible, by dilating the wound, and by their severe application, but without success, although the "free suppuration" caused by them, was kept up "for several weeks." Mr. Gilman, of London, in his prize essay on this disease, has given a satisfactory explanation of the cause of their failure; "when a caustic is applied," he says, "a new compound is formed, a saponaceous mass or eschar, which is generally suffered to remain, until it sloughs away. Of what then is this new compound formed, but of dead animal matter, a caustic, and of a peculiar poison, which we believe to be the cause of hydrophobia? It is true, the neighbouring absorbents are destroyed, so far as the action of the caustic extends; but the canine virus is as likely to extend with it, being only in a state of union from the commencement of this operation, which is continued till the poison is uniformly dispersed through the whole of the adjacent parts, forming an animal soap by their commixture. Hence, by such means, a more extended surface is exposed to the action of the absorbents, which are rendered highly irritable, and more active, and in consequence, perhaps, the case becomes more desperate." This is true philosophy.—Mr. G. has collected in one view, a number of recent cases, in which caustics of every description, were applied to bitten parts, and in the most severe manner, without preventing the disease. These cases, with Dr. Henning's, ought to satisfy every one, that it is torturing without benefit, to apply them. But many more that might be added, are quite a balance for those in which Dr. Mosely says, he has used them with success.

In preference to caustics, I have always advised the plan first suggested by Dr. Haggard of Chester, England, viz. the long continued stream of water on the wound, from the mouth of a tea-kettle: a powerful argument in favour of which remedy is, that as the poison exists in a watery form, we should expect that water would be its most proper solvent. I have also advis-

ed, keeping the wound open for some time after, as an additional security. If the wound be small, it ought to be dilated. Here again, however, I think proper to repeat the most judicious advice of Mr. Gilman, which is, "if the knife should enter the wound made by the dog's teeth, to recommence the operation with a clean knife; for if we continue to use the knife which is contaminated, in consequence of its entering the wounded parts, the operation may be rendered useless, by the sound parts becoming inoculated with the canine virus." Gilman on the bite of a rabid animal." London 1812.

An inattention to this excellent advice, explains the cause of the failure of attempts to extirpate the bitten parts, which sometimes occur.

5. They add to many facts on record to prove that the interval between the insertion of the virus, and the attack of the disease, is not in the least influenced by the distance of the wound from the throat, as formerly, and very generally supposed.

6. They show that my objections to the name *Hydrophobia*, or "dread of water," are well founded.* The symptom in any disease, which entitles it to give name thereto ought always to be present. Now I have shown that the *dread of water*, even when it does occur, is only symptomatic of the difficulty of swallowing: and the cases in Richmond, that of the boy Yorke, and many more prove that there is no instinctive dread of water, and that the symptom is often absent. Some of the patient's eagerly desired it to quench their thirst, tried to drink it, and even sometimes succeeded in the attempt. The negro Burwell agreed to take wine a few minutes before he expired, desired them to "be quick, for he was dying;" and he did die shortly after.

The strangury that followed the use of the number of and extensive blisters in the case of the negro Burwell, have destroyed my hopes respecting the good effects which I some years since was led to believe would result from the occurrence of that affection in the disease under consideration. I was induced to think

* The reader will perceive that I still adhere to the opinion of the impropriety of the name *Hydrophobia*, notwithstanding the criticisms on my objections to it by Dr. Ferriar, of Manchester. See his *Med. Histories and reflexions*.

highly of the means to produce that symptom from its having effected immediate relief in a case of tetanus under the care of Dr. Samuel Brown of Kentucky, and from the strong analogy between tetanus and Hydrophobia, the influence of that great principle in Medicine, that one irritation often subdues another ; the salutary influence of stranguary in other diseases ; * and the successful use of cantharides for the cure of this disease in Europe†, I urged the trial of them therein. I was surely safe in doing so, for the disease having never been at that time cured, by any remedy or any practice, I considered the way open for any new remedy. But I do not think it worthy of confidence now, after its failure to alleviate the symptoms in Burwell's case.

8. The application of caustics as recommended by Dr. Richard Pearson of London,‡ was vigourously tried by Dr. Trenk, in the treatment of Burwell, without the least good effect, and therefore ought not again to be used. They are painful in the extreme, and by trusting to them, we may loose time that might be employed with greater chance of success.

9. The cases in Richmond will for ever, I hope, destroy all confidence in that most shameful imposition the snake stone, which with regret I say, the people of Virginia, have long been the dupes.—If they trust to it hereafter, they will trifle with human life. Why should the public authorities, whose duty it is to remove every evil, threatening the safety, health or lives of the citizens permit the chance to be continued of any life being lost by allowing the possibility of access to so ridiculous a remedy.‡ Grand Juries have more than once presented existing nuisances, and complained of evils likely to injure the public health, of far less importance than that to which I allude. I first heard of the snake stone by seeing a proposition in the Richmond Inquirer, in the Autumn of 1805, or beginning of 1806, from J. R. Micou, the proprietor, to sell it for \$ 2000 : the stone to be deposited in Tappahannock as a central spot, for the use of the subscribing counties, and was so fully convinced that the subscribers to the fund would not only throw away their money, but risk their lives by trusting to

* Rush's works, vol. 4, p. 35.

† Diss. de Hydroph. auct. G : Uiberlacher of Vienna, C : T. Schwartz de Hydroph. Hale, 1813.

‡ Arguments in favour of an inflam: Ditath: in Hydrop: considered: London 1798, see also Med: Rep: N. York, 5 p. 78.

a remedy which had neither well-grounded theory, sure experience, nor common reason to recommend it, that I felt it my duty to express my disbelief of the virtues attributed to it, and to point out the causes that led to the ill-founded reputation of the stone in question, and to other nostrums with which the world has at various times been duped.* My advice, however, I believe was not taken. At all events, the reputation of the stone continued undiminished : and my denunciation of it even called forth a writer who warmly defended its preservative powers against the canine venom. I presume however, from its twice having recently failed to prevent the disease, although applied under circumstances very favourable to the success of its virtues, (if it is possessed of any) that his faith, and that of every other person, must be done away with respect to it ; and that no one will be so foolhardy as to trust to it in the event of the occurrence, in future, of any venomous bite.

The notion of the preservative power of the snake stone, originated in a district of country (Southern Asia) notorious for the prevalence of superstition of every kind, the deplorable depression of the human mind, and prevalence of jugglers, and impostors in religion, in medicine, and the common affairs of life ; and it is wonderful how the stone ever obtained the least credit in the United States, the people of which are certainly more free from the influence of superstition, and less liable to be imposed on by pretenders than those of most countries. Credit, however, it did obtain ; no doubt from its having been applied to bites, (in which any stone would have answered equally as well as the snake stone) without any disease following, and the consequence has

* My letter was published in the Richmond Enquirer, in April, 1806, and re-published in Philadelphia, shortly after in Poulson's paper. I ascribed the deception that takes place in the case of the use of preventives, and the unfounded reputation they enjoy to the following cases.

1. The absence of madness in the dog that gave the bite.
2. The part bitten being covered. In this case the poisonous saliva is wiped off, and the clear tooth only enters the flesh.
3. The inaptitude of the body to take the disease : the average being not more than one in twenty of persons bitten by dogs actually mad, who are attacked.
4. The careful concealment of many failures of the remedy, and the careful publication of cases of supposed success of prevention.

been the probable sacrifice of two lives !! The experience of its inutility has indeed been dearly bought, but the high price of the purchase, as in every transaction of human life, will cause a greater value to be set upon the possession of it.

The remark I make with respect to the unfounded reputation of the snake stone, in the prevention of the operation of the canine virus on the human system, will apply to all other preventive remedies, with which Europe, Asia, and America, have long abounded,

From Asia we have, 1st, the Tonquin remedy, composed of Musk and Cinnabar ; 2dly, the snake stone. In England, the Ormskirk nostrum, the basis of which was chalk and Elecampane root; and 2d, the *ash coloured liverwort*, and black pepper, long held their ground : this last was highly praised by Dr. Mead, the medical oracle of his day, and upon his authority it was introduced into the British Dispensatories. In Germany filings of copper were much celebrated : so also was the *Anagallis Arvensis*, red pimpernel or chickweed, which was even protected from destruction by law in Switzerland and other governments. In the United States, preventive remedies have also multiplied. In Pennsylvania, we have had the *Anagallis*, and Mr. Stoy of Dauphin County, and Mr. Kettering of Lancaster County, had been long celebrated for their "uniform success" with it. It failed however in two cases that we know of, in which it had a fair trial as a preventive: one to which I allude, is that of the late Mr. Huber of Lancaster.* But Dr. Stoy's widow still keeps up the farce of advertising her

* See Barton's Med. and Physical Journal, vol. 2, p. 125. Dr. Muhlenberg informed me of another case in which it had failed. It also failed in Philadelphia, in 1802. See Med. Repos. N. York, Hexade, 2d, vol. 1, p. 105. These three cases are enough to fix its character.

This is the third time I have come forward to deny the virtues of the snake stone. The second time was in the Medical Museum of Philadelphia, vol. 5, p. 1, in answer to a publication by the Rev. Wm H. Harding, in the Med. Repos. of New York, Hexade 2d, vol. 5, p. 248, greatly extolling a stone in the possession of the Rev Lewis Chaustien, of Frederick county, Virginia, which he called the *Chinese* snake stone. M. C. asserted that he HAD CURED about 80 persons in less than two years, some of whom had the hydrophobia on them at the time of application !! Thus then it appears that there are more snake stones than one in Virginia. I have also one, which was brought from Calcutta a few years since. Others are in the possession of different persons in the United States.

nostrum, which the late Rev. Dr. Muhlenberg of Lancaster, the celebrated botanist, (who reposed great confidence in it) assured me was composed chiefly of the *Anagallis*.

In New York, we have had the famous remedy of J. M. Crouse, for which the legislature gave him a large sum, and which was composed of the powder of a dog's jawbone burnt, the powder of the false tongue of a newly foaled calf, and verdigris off a copper of George II. * 2. The plant called the scull cap, or *scutellaria lateriflora*, on the preservative powers of which many still place the most implicit confidence.

Lately the *Alisma Plantago*, marsh or water plantain, comes recommended to us upon the authority of a Russian peasant, who is said to have long employed it with success, and on that of a Russian Counsellor of State, who has written a memoir on the subject. Considering the *Anagallis* as out of the question, I would observe with respect to the two last, that upon neither of them would I rely to the exclusion of the local treatment I recommend: as they all are liable to the same objections I have urged against the supposed infallibility of preventives in general.

Indeed it is IMPOSSIBLE from what we know of the disease, and particularly of the *uncertainty* of the *operation* of the *canine virus* and the extreme irregularity with which it takes effect, varying from three weeks to three years and three months,† that any remedy can claim the merit of preventing it, how long soever it may have been given after a bite without disease following: all we can do is to apply such treatment to the bitten parts as reason recommends, and to leave the rest to him, without whose knowledge "a sparrow does not fall."

* I have given the prescription at length in *Cox's Med. Museum*, Vol. 5.

† See the case of J. Pyle's son, of Delaware county, Pennsylvania, which I have related in the *Med. Repository of New York*, vol. 5, p. 298.

(*To be continued.*)

A Case of Mania a Temulentia. Communicated by Dr. GILBERT FLAGLER, of Philadelphia.

ON the 3d of March last, I was requested to visit Mr. B. who was represented to me, as being very ill. Before proceeding to a detail of the particular symptoms under which he laboured, when I first saw him; it may not be improper to state the following circumstances, which I learned from the family, in relation to his previous habits of living. I was told that for several weeks previous to his disease, he had had a very great thirst, and voracious appetite, particularly at night; that on going to bed, he generally took with him, a quart of water, a half a loaf of bread, and a half pint of gin, all of which he invariably eat and drank during the night. He had at the same time a violent diarrhoea, with tenesmus; his sleep was interrupted; and he had frequent spells of difficult respiration, with a hacking dry cough, though not very troublesome, and hæmoptyses and bleeding from the nose in the morning.

The symptoms under which he laboured, when I first visited him, were the following:

Pulse 98 in a minute; full, tense; skin not very hot nor dry; countenance bloated; thirst very great; tongue dry, tremulous, and covered with a white scurf; want of appetite; great constipation of the bowels, with an acute pain in the left hypochondria, and an inability of laying on that side; abdomen tumified; very great tremour of his hands—ordered him a cathartic of senna and manna, and pedeluvium at night.

4th. Saw him at 9 o'clock, A. M. The cathartic taken yesterday, produced six very copious dark coloured stools. Pulse 85, full and soft, tongue moist and less tremulous; thirst abated; skin moist, and nearly natural in its temperature; no pain in the side, except when pressed against. He took for breakfast, an egg, with toast and coffee, with considerable relish. He had slept well during the preceding night. Ordered him another cathar-

tic of senna and manna, with *crem. tart.* At 5 o'clock, P. M. a messenger brought me word, that my patient was a great deal worse ; and requested my immediate attendance. I found him in bed, shivering with a very violent chill ; his pulse was almost imperceptible and irregular. He begged to have some gin, and said, that unless he could have it, he was apprehensive of a fit of convulsions. Upon asking, whether he had ever had a *fit*, he replied that he had had but one, and that he then felt as he now does. I gave him a small glass of gin with 30 drops of *Spt. Ammoniae*.

He said, he felt as though his stomach and bowels were freezing within him. Agreeably to his prediction, he was now taken with a fit of epileptic convulsions, which lasted about two minutes.

Ordered him a decoction of *seneka* and *chamomile flowers* ; a small glass full every two hours, with *sinapisms* to the feet.—Saw him again at 10 o'clock, the same evening ; he had slept several hours, and was much better ; took a little nourishment, with a cup of tea ; pulse 98, soft and regular ; thirst moderate—continued the medicine, with acidulated toast water for common drink.

March 5th, at 9 o'clock, A. M. I found my patient vomiting, which had commenced at 5 in the morning ; his attendant assured me that he had vomited, at least three pints of blood ; he vomits frequently ; and still throws up great quantities of blood.

In the night, he got out of bed, as I was informed, and took a hearty drink of gin and cold water, which was soon followed by vomiting. He now had great thirst, and begged for some gin and water. I gave him a small glass of gin with 30 drops of *tinct. opii*. he threw it up immediately ; I repeated the gin with 60 drops of *tinct. opii*. In this, I tried opium, ether, *spt. c. cervi.* and *camphire*, but with no advantage. I now ordered *sinapisms* to his feet, and a very large one on the epigastric regions ; these were applied at 10 o'clock ; at 12 o'clock, the vomiting appeared but very little abated. I then ordered a tea-spoonful of the following mixture every fifteen minutes. *R. Tinct. Kino* $\frac{3}{2}$ *i.* *Spir. ether.* *Vitriol.* $\frac{3}{2}$ *ii.* with a view to check the hæmorrhage as well as the vomiting ; at 2 o'clock, the vomiting ceased ; discontinued the kind. At 12 o'clock, P. M. appeared much bet-

ter ; thirst lessened ; tongue moist and less tremulous, than at any time previous, also less tremour of the hands ; his pulse 108, soft and regular ; had slept considerably in the early part of the evening.

6th. 9 o'clock, A. M. I found him this morning in the same unpleasant situation that he was in yesterday morning. He had again drank a good deal of gin and water, during last night, which no doubt, was the cause of his present situation. I now resorted to the same means for relief as I did yesterday, but with no benefit. He became very much exhausted, from the great loss of blood from the stomach. I now proposed calling in some physician, in consultation, which was not objected to. Dr. Jos. Klapp was accordingly requested to see the patient with me.

At 3 o'clock, we met at the patient's house ; the vomiting had subsided since 12 o'clock. At present, his symptoms were as follow : pulse 108, full, tense, and resisting pressure ; tongue dry, and covered with a crust ; thirst very great ; pain, on pressure, in the left hypochondrium, with tumefaction—was ordered *Vinæ Sectio ad 3viii* ; saline mixture, a table-spoonful every hour, with an enema, pedeluvium, and sinapisms to the feet.

7th. Saw our patient at 11 o'clock, A. M. We found him down stairs, eating an orange. Pulse full and soft ; 100 in a minute ; had a small stool, by which a small quantity of blood was discharged ; had rested very well ; swelling of the side diminished ; no tremour of the tongue or hands ; thirst not great ; no pain or soreness in the left side. Was ordered *R. Sal. Glaub. Sacch. alb. aa. 3ij. Succ. Limon 3ss. Aq. bullient 1lb.* A wine glass full to be taken every hour. Chamomile tea to be drank occasionally, and the saline mixture to be continued.

9 o'clock, P. M. Thirst not so great ; had six copious stools ; appetite better ; the fœces rather hard, with mixed blood, and very offensive.

March 8. Not so well ; pulse 108, tense and quick ; thirst considerable ; face flushed ; and has a dry cough. At 9 o'clock, P. M. I was hastily sent for, with information that my patient was much worse ; and that he threatened to kill his wife, or any other who should oppose his leaving the house. I found him perfectly maniacal ; though not furious ; he lay on his bed, talk-

ing incoherently ; and continually picking and pulling the bed-clothes ; takes no notice of any thing said to him, unless pronounced in a very strong voice ; pulse small and quick, 112 in a minute ; had but one stool this day ; skin cold ; tongue dry and tremulous ; gave him 25 drops of laudanum ; ordered pedeluvinum, with sinapisms to the feet—the medicines prescribed yesterday, to be continued.

9th. At 11 o'clock, A. M. saw him with Dr. Klapp : we found him not so well ; had slept but very little ; maniacal all night ; pulse 112, small and quick ; tongue tremulous, dry, and very red, with tremour of the hands ; on being asked how he was ; he replied, not so well as yesterday, on account of his having been at a raising last night, or the afternoon before, and his having there taken too much strong drink.

R. Antem. Tartrat.	gr. xvi.
Aq. Fontis.	ʒ iv.
M. ft.	

A wine glass full to be taken every half hour, together with warm chamomile tea. At 5 o'clock, P. M. emetic has operated very well ; he threw up a large quantity of bile ; and had two stools ; feels much better ; skin moist and cool ; tongue and hands less tremulous ; pulse 112, full and soft ; face less flushed and bloated.

R. Flor. Chamomile	ʒ ss.
Rad. Serpent.	ʒ ss.
M. ft.	

Make one pint of infusion, M. ft. and take a wine glass full every two hours. At 10 o'clock, P. M. I was again sent for ; Dr. K. was requested to attend immediately. We were informed that he had been very furious, so as to require three or four strong men to restrain him. This state had, however, subsided by the time we came to him ; we found him in a stupid and inactive state, much disposed to sleep ; complains of being cold, and shudders ; pulse small, irregular, and very frequent ; ordered 20 drops of laudanum, and to continue the tea, and sinapisms to be applied to his feet.

March 10th. At 11 o'clock, we found him much better ; rested tolerably well ; his mind appears to be tolerably correct on every thing, except his false belief of his having been at a raising last night ; and of his having been prevented from going home by some one, whom he felt disposed to chastise ; his answers to questions are pertinent ; says he feels very weak. Pulse 108, full, soft, and regular.

Was ordered to take a gill of senna and manna infusion, every hour, with calomel 2 grains every hour ; commencing with this last, one hour previous to taking the sennæ infusion. At 8 o'clock, P. M. we saw him again ; has had three copious stools ; pulse 108, soft and small ; skin cold, and complains of cold and shuddering ; took a little coffee and queen-cake. He still labours under the hallucination of having assisted at a raising, to which he ascribes his illness. Was ordered pedeluvium, and sinapisms to the feet ; also to take gruel copiously, and to continue with the chamomile tea.

11th. At 11 o'clock. Had a sound and refreshing sleep last night ; very little thirst ; pulse 100, full and soft ; skin moist, and of a natural temperature ; complains of an itching about his neck and breast. He has until now laboured under the impression, that he had actually been at a raising, and nothing but much conversation and positive assurance to the contrary, could bring him to the belief, that he laboured under a false idea.

9 o'clock, P. M. Had had company ; complains of fatigue ; and some pain in the left hypochondrium on pressure ; had two stools since we saw him ; thirst very little ; appetite good ; has eat veal soup and crackers ; continued the tea, and pedeluvium.

12th. At 9 o'clock, A. M. Rested till midnight very well, but after that very little ; had twitching of the tendons, in the inferior extremities ; cough dry and hecking ; pulse as yesterday ; he was ordered to take syrup scillæ, for his cough ; the bitter tea to be continued three times a day, with flax-seed tea occasionally.

13th. At 11 o'clock, A. M. Pulse 90, soft ; rested very well last night ; cough not troublesome ; and says he feels well, excepting much debility ; has had two stools ; took six oysters for breakfast.—Continue the medicine.

14th. At 11 o'clock, A. M. Pulse 90 ; rested very well last night ; is better in every respect.—Continue the medicine.

15th. At 9 o'clock. Not so well as yesterday. He took a little brandy and water, last evening, before going to bed; in consequence of which he slept but very little. Pulse small and contracted, and only 80 in a minute; appetite none; extremities cold: ordered cathartic pills; pedeluvium, and sinapisms to his feet. 9 o'clock, P. M. has had two motions of the bowels; pulse 90, full and soft; skin warm. Ordered an opiate with weak brandy toddy, during the night.

16th. 9 o'clock, A. M. Much better; pulse 90, full and soft; very little thirst; has rested well all night; appetite good. He now continued to recover, and nothing further occurred worth relating.

REMARKS.

The evidence, already extant, in favour of the employment of emetics, in the treatment of *temulent diseases*, puts their efficacy beyond a doubt. So much more efficacious, indeed, does this plan of treatment appear to be, than the stimulant mode of cure, that it cannot but be estimated as an important improvement in practical medicine.

I have myself, had a case lately, in which the most complete mania, from strong drink, was speedily relieved by *one* emetic. Mr. C—, in Chester-street, was about four weeks ago, affected with mania, which was ascribed by the family, to the intemperate use of ardent spirits. I was sent for at 12 o'clock at night, and found the patient perfectly maniacal. He told me, that he had but three weeks more to live, and mentioned the very hour at which he said he should die. He was betimes, so unruly, as to require two stout persons to restrain him. His countenance was flushed; his eyes wild and staring; pulse full, rather tense, and about 80 in a minute. I gave him 30 grs. of Ipecac. This produced one or two imperfect ejections from the stomach. In about 30 minutes

after the first dose, I gave him 30 grs. more of the Ipecac. and remained with him until it had produced two copious, bilious discharges from the stomach. I now left him.

On visiting my patient in the morning, I found him perfectly rational. He said he felt perfectly well; he recollects every thing that had occurred during his maniacal state.

From recent experience, I am inclined to believe that emetics are no less useful in hysterical mania, than in that species which is caused by habitual drunkenness.

In a case of the former species, which lately came under my care, (Mrs. Warner, Green-street, near the Ridge-road,) in which I had employed the usual antispasmodics, to a very great extent, and also bleeding ineffectually. I succeeded, in giving immediate relief, by the exhibition of about 30 grs. of Ipecac. In the Transactions of the Physico-Medical Society of New York, Vol. I. there is a paper on the efficacy of emetics in spasmodic diseases, by Dr. Jos. Smith; which is well worth reading.

"The experience," says this gentleman, "I have had of the utility of emetics in hysteria and epilepsy, enables me to assert, with confidence, that they are more efficacious than any remedy ordinarily employed in convulsions."

"The rules to be observed in their administration are few and simple. If the paroxysms quickly succeed each other, the emetic should be given in divided doses during the intervals. No alteration of the symptoms will take place until the occurrence of nausea; after which, the spasms will be found less violent, and the patient will complain of sickness and languor. As the nausea increases, the spasms become still weaker, and the intermissions longer, and as soon as full vomiting occurs, the paroxysms cease to return. Such is the manner in which the convulsions generally disappear. In some cases, I have seen the fits terminate before vomiting was excited; and in others, noticed several slight ones after the contents of the stomach were ejected; but in no instance have I known vomition to fail in producing the desired effect. In general, between the fits, patients are rational; but it sometimes happens that they are delirious or comatose. When this is the case, there is some difficulty in administering the medicine; but in common, sufficient can be given

to answer the intention. Under these circumstances, the first favourable change is a perfect restoration of sense and voluntary motion; the patient expressing great uneasiness about the stomach."

I have myself, in several cases of hysterical convulsions, used emetics, and always, with decided advantage.

EDITOR.

An Essay on the means of lessening pain and facilitating certain cases of difficult parturition. By WILLIAM P. DEWEES, M. D. Phila. Published by Thos. Dobson, and Son, 8vo. p. 156.

It is with much satisfaction that we notice this Essay.—Its subject is so important,—so interesting to humanity, that, in bestowing more than an ordinary share of attention upon its contents, we hope to perform a service, by no means unacceptable to our readers.

The Author, whose experience has been very extensive, and whose character as a successful and scientific accoucheur ranks very high, is entitled to the greatest attention,—he writes like a practical man,—and, therefore, writes usefully.

Sensible therefore of the very great deference which is due to the experience and opinions of Dr. Dewees; we will not pretend to enter into a critical examination of his doctrines and practice, but proceed to give an account of his Essay.

After having described the anatomy of the uterus, the author proceeds to the physiological consideration of this organ, in relation to its functions in the process of parturition—The views which he takes on this head are original, and he supports them with much ingenuity of argument.

The uterus has always been considered as one individual organ with regard to the functions of its different parts;—that is, the body, neck and fundus of this organ, are held as a single viscus, whose actions are similar and dependent on each other.

To this opinion Dr. Dewees objects, he observes, “I cannot help regarding the neck of the uterus as a distinct and independent part from the body and fundus, and as having its own peculiar laws and actions; and that this separation of powers is absolutely necessary to the explanation of some of the phenomena exhibited by health and disease, and the influence of certain agents on these parts.”

His reasons for thinking so, are;

1. The fundus and body may be greatly distended, without affecting the condition of the neck. Thus during the first six months of pregnancy, the former parts are generally distended, whilst the latter part remains nearly unaltered.

2. After the sixth or seventh month, the neck begins to unfold, whilst the other parts remain nearly stationary.
3. The neck may be affected by disease, while the fundus and body remain free and vice versa.
4. The different conditions in which these parts of the uterus are at the same time—In labour, the office of the body and fundus is diametrically opposite to that of the neck ;—whilst the former contract, the latter expands.

The author does not accord with those who believe that the mouth of the uterus, in a natural and favourable labour, is dilated by the mechanical power of the ovum, forcing it asunder, as it were, by a wedge. His reasons for dissenting from the commonly received opinion on this head, appear to us very ingenious and altogether valid—As it appears evident, that the *circular* must be weaker than the *longitudinal* fibres of the uterus, the dilatation of the mouth of this organ, during the first stage of labour, is considered by the author, as the necessary result of the contraction of this latter set of fibres, which alone seem to be concerned in the propulsion of the foetus—“ By the contraction (says he) of the longitudinal fibres the length of the uterus diminishes ; this puts the circular fibres upon the stretch, since the uterus cannot diminish in one direction, while the mouth of the uterus remains shut, without augmenting in another ; therefore the circular fibres are a little distracted, and they immediately co-operate with the longitudinal and force the uterus with its contents lower into the pelvis—This kind of action is reciprocated for some time ; but the circular fibres eventually yield to the influence of the longitudinal ; first, from their having expended a portion of their power in maintaining a state of contraction so long ; and secondly, their being absolutely the weaker fibres—Hence the circular fibres of the neck relax ; and hence the dilatation of the mouth of the uterus.”

Under the head—“ Of the contraction of the fundus and body of the uterus” the author advances the following positions.

1. “ The contraction of the circular fibres is not attended with pain.”
2. “ Their contraction, however violent, does not forward the child.”
3. “ They do not possess the power of alternate contraction in

the same degree as the longitudinal fibres ; and that they may exert this power, it is necessary, at first, to have them distracted by some force or other."

4. "The pain in labour depends in a great measure, if not entirely, upon the contraction of the longitudinal fibres."

5. The changes which the uterus has suffered from civilization and refinement must be chiefly confined to its longitudinal fibres."

The arguments offered in support of these positions are both ingenious and forcible. There is also much ingenuity and appearance of correctness in our author's mode of accounting for those changes which refinement and civilization have produced in the female constitution, and which renders parturition more painful and tedious than it is with the women of savage nations. He says : " From what has been said, it appears that the pain attending uterine contractions, depends upon certain physical changes, which the longitudinal fibres have undergone from the cause just mentioned (i. e. civilization and refinement). Why a particular set or given direction of fibres should have suffered more than another may be impossible to determine ; but that they have, we believe to be most certain—This change however, is by no means confined to the uterus, as every straight muscle of the body appears to have participated with it, since it is admitted that the man of the civilized world has lost much of his original strength. On the other hand the circular muscles as far as we can determine have lost nothing of their primitive power ; since it is more than probable, that the various sphincters, among which may be reckoned the circular fibres of the mouth of the uterus, perform their duty as effectually and as powerfully, as in the time of our first parents."

The cause of pain and difficulty of labour, consisting for the most part in a certain condition of the soft parts immediately concerned in labour, and especially in *an unnatural rigidity of the mouth of the uterus*, the subject is considered under the following heads.

1. When rigidity arises from the circular fibres maintaining their contraction too long ; but unattended with inflammation.

2. Rigidity, attended with inflammation.

3. Rigidity arising from previous local injury.

4. Relative rigidity ; proceeding from disproportionate powers between the longitudinal and circular fibres.

5. Tonic rigidity ; where the circular fibres remote from the the mouth embrace the child too powerfully.

Rigidity of the first kind is subdivided into three varieties. 1. Where the subject is very young, arising, as the author supposes, from the uterus not having yet had its complete state of development when impregnation took place ; though sufficiently for the purposes of gestation. 2. Where the subject is not very young. The parts concerned in parturition, not having been employed early, according to the design of nature, seem to have forgot a part of their duty. In this variety much benefit may be derived from the use of an antiphlogistic diet—keeping the bowels freely opened, and occasionally losing blood some time before the period of gestation. 3. Where the action of the uterus is prematurely excited. As it must be always useful to be able to distinguish this variety from the two last mentioned, the following remarks are mentioned as for the most part indicating this variety. 1. When the uterus is prematurely excited into action (as at the eighth month) we can sometimes feel the os tincœ. 2. When the mouth of the uterus is found rigid, both in the absence and presence of pain. 3. When the membranes, touched through the mouth of the uterus are found less tense than when the uterus is naturally disposed to labour. 4. The pains are more irregular in their succession and continuance. 5. "There is no secretion of mucus, nor disposition in the perinæum to relax." 6. "There is no immediate subsiding of the abdominal tumours.

Rigidity with inflammation. The three varieties mentioned above, are all liable to inflammation : 1st. From local irritation either of the presenting part acting mechanically on the mouth of the uterus, or from the improper interference of the midwife. 2. From improper diet or drink. "When inflammation comes on, the woman becomes extremely restless, and does not enjoy the calm which is common at the cessation of pain ; the vagina becomes hot and dry ; the mouth of the uterus thickens and becomes more yielding ; the secretion of mucus, if it had taken place, ceases ; the pulse becomes quick, frequent and hard ; the respiration hurried ; the head much pained ; the face flushed ; great thirst ; the skin hot and dry, or profusely sweating."

Relative Rigidity. "This may happen from a variety of causes, but we shall only notice one ; namely, a kind of apoplexy of the

uterus. This is known by labour having come on kindly at first, and gradually diminishing in force ; by the mouth of the uterus having a disposition to dilate ; by its thickening ; by the presenting part not protruding during pain ; by the pain extending itself all over the abdomen ; by the woman's complaining of a sense of suffocation ; by a hard and full, or depressed or labouring pulse ; by the irregularity of the pains both in force and frequency."

Tonic Rigidity. " This only occurs where the waters have drained off a long time, and the whole of the internal surface of the uterus is closely applied to the body of the child."

After having spoken of the various causes of *rigidity*, the author proceeds to " say a few words on the principal remedies, which have been employed with a view to relieve it.

Opium. This still continues a favourite remedy with most accoucheurs for the rigidity of the os uteri. The author objects, strenuously to its employment in such cases. He says ; " I have often tried it myself, and have often seen it employed by others without in a single instance producing the effect for which it was prescribed ; sometimes it evidently did harm. It has however undoubtedly been used with advantage in those cases where the uterus had been prematurely excited into action ;—it has suspended the contractions, until the proper time, and when they were renewed, the uterus was healthily disposed, and the labour soon finished. But here it was given not to dilate the mouth of the uterus, but to suspend the contractions of the longitudinal fibres. Nor can this article be considered as an innocent one ; we believe it to be extremely mischievous, in many cases converting the rigidity without inflammation or fever into those with them. This I have more than once seen, and but too frequently had reason to regret."

Warm Bath. This remedy is not much to be depended upon. The author says ; " the result of my experience, enquiries and observations on this point may be reduced to three heads :"

1. It is almost always inconvenient.
2. It is sometimes ineligible.
3. It is always limited and uncertain in its effects.

Blood-letting. " This remedy," says the author, " is by no means a new one in labour ; but employed for the express purpose of diminishing pain, and subduing the various species of ri-

gidity just spoken of, and carried to an extent that will ensure these objects, that is, diminishing pain, disposing the os uteri to dilate, the external parts to unfold, and cicatrices to yield, originated, as far as I know, with myself." "We can," he continues, "recommend with a confidence that should only be produced by experience, this operation, not only as a safe, but a certain remedy for all the objects we have just mentioned. This remedy was at first suggested to me by accident. In the summer of 1789, I settled at Abington, and was quickly introduced to a large share of obstetrical practice; in September of that year, my attendance was bespoken for Mrs. W—, whom I was informed had suffered every thing, but death, from her labours; the crotchet had several times been employed to effect the delivery of her children. She looked forward with great solicitude and apprehension, and indeed almost considering herself a certain victim to the approaching labour. I had also very great fears for my patient, as I was young, and had not much experience; these forebodings were very much augmented, by my being called to her under a severe haemorrhage from the lungs, which quickly reduced her to a state of extreme debility. Before she recovered from this state of weakness, she was taken suddenly in labour, which increased my apprehensions almost to despair, lest she should die under my hands. As I approached the house, I was met by several of her friends, who with great earnestness, begged me for God's sake to make all possible haste; I proceeded immediately to her bed side, and in about fifteen minutes delivered her of a fine healthy child; no accident supervened."

Thus receiving an important hint from nature, he resolved to imitate this example in the first case that should occur to him, where delivery was rendered tedious or painful, by rigidity of the parts. He very soon met with an opportunity for putting this new plan of treatment into practice; and the result was highly satisfactory.

Twenty-three cases are related by the author, in which copious and prompt bleeding was employed with the most happy effect.—We cannot give a more correct, and satisfactory view of this practice, than by transcribing a few of these cases.

CASE III.

1792, June 11th. Mrs. F——, aged seventeen, very small of her age, never menstruated until after marriage ; was taken in labour with her first child ; pain came on very gradually for the first few hours, then augmented very considerably for some time, and then subsided almost altogether ; this flagging of the pains was considered as a proof of weakness, and to obviate it, stimulating drinks were liberally given ; pepper, thyme, ginger, and onion-tea, had each their trial, without advancing the labour. Her friends became alarmed, and I was sent for ; I found her with much fever, severe pains, profuse sweats, hot vagina, swelled labia, and rigid os tincæ. I proposed to bleed her, but this she would not permit ; she was placed in the warm bath by way of substitute ; mild drinks were given, and her bowels were opened by injection. Warm water was frequently thrown up the vagina, but without any observable effect ; I again proposed the bleeding, but it was again rejected. As I had observed that bleeding had done good almost in proportion to the sickness it excited, I thought of giving emetic tartar in small doses, until nausea was produced ; I soon brought the stomach to this state, which was kept up with considerable severity for two hours, but without any good effect. I now urged the bleeding as the only chance of benefiting her ; to this, at length, she reluctantly submitted ; she was bled twice in an hour, the last of which was copious, and had the long looked-for effect ; the uterus dilated almost instantly after the bleeding, and the external parts yielded without any difficulty ; the child was delivered in half an hour.

VAR. 2. CASE IV.

1790, August 30th. M. M. in labour with her third child ; she had suffered very severe pains for thirty-six hours ; the waters had been evacuated twelve hours ; the vagina hot, and dry ; the external parts much swoln ; the mouth of the uterus thick, firm, and but little dilated ; much fever ; bounding pulse ; severe headache ; great thirst ; much anxiety and restlessness ; I bled about

fifteen ounces, but with no evident advantage ; at the end of an hour she was bled twenty ounces more ; this seemed to affect her considerably ; but its use was but transient ; she was presently bled twenty ounces more ; she became extremely sick ; the parts quickly dilated, and she was delivered in half an hour more.

CASE XIV.

1805, February 13th. Mrs. C.——, with her first child ; she had been forty-eight hours in labour when I was called ; the waters had discharged fourteen hours—her pains severe, but irregular ; the mouth of the uterus opened to about the size of a quarter of a dollar, but very rigid ; the vagina, &c. very hot and tender ; pulse frequent and hard—she supposed she had just entered her eighth month, and was seized with pains in consequence of a fall ; a midwife was sent for, and she endeavoured by stimulating drinks,* frequent and rude touching, to provoke labour.—She was bled twice in four hours, to the amount of twenty-two ounces ; received a purgative injection, which operated well, but without producing any change in the uterus. The head presented naturally. Two hours more were allowed to pass, with a hope of things doing better—but no alteration being produced, I made Mr. King (a young gentleman who staid at my request with the patient) tie up her arm while standing on her feet, and take blood until she nearly fainted ; she was then laid in the bed, and after an exemption from pain for about fifteen minutes, they came on very rapidly ; the mouth of the uterus was found completely dilated, and the child was delivered in a quarter of an hour more.

CASE XVII.†

In June, 1796, I was called to Mrs. T.——, in labour with her second child. The following account I received on my arrival,

* This patient took, by the directions of her midwife, in the course of forty-eight hours, three pints of wine, one of brandy, a large quantity of strong black pepper tea, with a view to force her labour as it is termed.

† See Med. Repos, Vol. II. No. 1. p. 24.

from the midwife. "She had been in labour sixteen hours; the waters discharged, six; the mouth of the womb but little opened; and when in pain the os externum seemed to close up. Many things had been given her to force the labour; but the child was still as high as ever. She had passed no water for twelve hours, and was very costive."

I found her very feverish; complaining of great heat in her abdomen, and violent pain in her head. On examining her vagina, I found, as the midwife had stated, that the os tincæ was but little dilated, its edges very rigid and hot—as was the whole tract of the vagina; the rectum much distended by hardened fæces, and the bladder considerably by urine. The head of the child was still above the brim of the superior strait; but could not exactly determine its situation with respect to the pelvis, as the os uteri was not sufficiently opened for this purpose.

I immediately bled her twelve or fourteen ounces, and ordered an injection, which procured two stools, and a discharge of urine. I again examined her, and found the mouth of the uterus more dilated (it being now opened to about the size of half a crown) which enabled me to determine the precise situation of the head. It was a perfectly natural presentation, and the vertex had now descended lower into the pelvis. The pains were very powerful. The head at length cleared the superior strait, and the vertex was about to turn under the arch of the pubes, but completely enveloped by the uterus—during pain the perinæum was much distended; the os externum, instead of yielding to the impulsive force of the uterus, rather closed, so that two fingers could not be retained; a seam or cicatrix, from her having had the perinæum lacerated in her former labour,* formed a kind of barrier; and the head, in consequence, was thrown to the right side of the inferior strait, where the parts were so extremely stretched, that I feared

* The laceration ran from the inferior termination of the left labium, to about the termination of the sacrum. I judged of the extent of the injury by the cicatrix, which could be easily traced to this place. And indeed, conversing with the gentleman who had delivered her, he confirmed my supposition. It was a long while healing; and her health suffered much from the excessive and long continued discharge. But from this she recovered, and when I saw her, she appeared in robust health. She was about twenty-two years of age, of short stature, and rigid fibre.

each pain would make the head burst through them, in spite of every exertion to the contrary.

From the oblique situation of the head with respect to the vagina, the os externum, instead of answering to the axis of the inferior strait, mounted directly to the pubes; and consequently, the right side of the vagina, perinæum, and rectum, had to support the major part of the force exerted by the uterus and its auxiliary powers. In order to counteract their influence, I supported the external parts with my hands, and made, during each pain, a strong pressure against the head, and directed the woman to suspend her voluntary powers as much as possible. Six hours were spent in this manner, without advantage; the os uteri still rigid, hot, and but partially dilated; the os externum still not disposed to yield; and the cicatrix as firm as ever.

The head, notwithstanding my efforts to prevent it, advanced; so that the vertex, covered by a portion of the uterus, had partly emerged from under the pubes. At this period it was extremely difficult to touch the mouth of the uterus, as it had been receded towards the sacrum in proportion as the vertex had descended. The soft parts were very hot and dry; I began to be much alarmed for the fate of my patient. What to do I did not well know: I was ten miles from the city, and no one near me on whose judgment I could rely. In this dilemma, I had nearly resolved on dividing the parts, thinking this preferable to letting the head force its way through them, which I began to consider inevitable, when fortunately Dr. Physick's case of luxated humerus occurred to me, and determined me to try the effects of bleeding, *ad deliquium animi*. I represented to the friends of my patient the danger of her case; the possible result of the bleeding; and the inevitable one, did it not succeed. They agreed to the trial. I had her placed erect, while the midwife strongly supported the perinæum, &c. and opening a vein, allowed it to bleed until she fainted.* She was then again placed on her side.

On examining her now, every thing appeared better; the external parts were perfectly soft and yielding, and the os uteri pretty fully dilated; but no pains succeeded. I waited in this way half an hour (the patient continuing very faint) and no pain coming on,

* The quantity drawn, was upwards of two quarts.

and the parts being now in a proper situation for delivery, I introduced the forceps, and delivered a living, and healthy child. The parts very readily yielded without laceration: the woman had a rapid recovery."

CASE XIX.

"On the 26th September, 1800, I was called to visit the wife of Michael Falkrod, at Frankford, in consultation with Dr. Ruan. She had been in labour twelve or fourteen hours, with her second child;* the pains frequent and strong; the waters discharged some time; the head was situated favourably, and completely occupied the vagina; the perinæal tumour large; the os externum not larger than a common finger ring; and admitting the finger with some difficulty in the absence of pain; during pain it was thrown up against the inferior edge of the pubes, in such a manner as not to admit the finger, or allow it to be retained, if previously introduced. Externally, a large cicatrix was found running to the very verge of the anus; internally, it could be traced farther. This cicatrix prevented the unfolding of the external parts so effectually, that the repeated efforts of the uterus for several hours, were insufficient to make them yield, though the head had been closely applied to them during that period.

This patient was a strong, healthy woman; considerable fever had been excited; the pulse strong, frequent, and hard. I proposed bleeding *ad deliquium*, to which Dr. Ruan consented. We immediately opened a vein, and took about forty ounces of blood, but as her pains were so rapid, we were obliged to take it from her in a recumbent posture, and no disposition to syncope was manifested. This quantity, however had some effect, as there was evidently a beginning of relaxation, and an abatement of the violence, and frequency of the pains. We now agreed upon a second bleeding, and to have it taken in an erect situation. We, with some difficulty, effected this; when, upon taking five and twenty or thirty ounces more, she fainted; she was laid upon the bed, and in a few minutes, by the forceps, was delivered of a fine

* With the first, she had suffered an extensive laceration of the perinæum.

healthy boy. Our patient recovered rapidly without accident or drawback.

Having stated a variety of cases of difficult and painful labour from rigidity, our author goes on to speak of difficulty of labour, arising from want of force in the uterus.—In such cases, Dr. Dewees considers the ergot a very valuable remedy. “It would appear,” he says, “from all I have been able to collect, and from all I have observed, that it rarely fails or disappoints, when properly prescribed.”

It appears, by a paragraph quoted from the *Dict. Rais. Univers. d'Hist. Natur.* of Bomare, that the ergot was in common use before the year 1774, “and was prescribed for the very cases, for which it is at present given; and that the effects noticed after its exhibition, were as prompt as they are now found to be.

“On lit dans le *Journal de Physique*, Aout, 1774, que madame Dupille près Chaumont en Vexin, et dont la principale occupation semble être le soulagement des malheureux qui manquent de secours, et qui en ont besoin, a fait prendre d'après les expériences de madame sa mère à des femmes qui avaient de la peine à accoucher, plein un dè à coudre d'ergot pulvérisé et delayé soit dans du vin ou de l'eau, ou de bouillon : le travail de l'accouchement, lorsque l'enfant se présente bien, se terminait dans le quart d'heure, et ces femmes n'ont point été incommodées de l'usage d'un tel remède.”

“This remedy,” our author remarks, “is regarded as a stimulant of no mean power; but I must confess, I have never witnessed any direct operation upon the sanguiferous system. I have therefore, of late, paid little attention to the state of the system, when about to exhibit it. Its operation appears to be very evanescent, and to be exclusively confined to the muscular fibres of the uterus. Indeed, it appears to be one of those rare substances, which are justly entitled to the name of specifics.”

The situations in which the exhibition of this article becomes proper, are :

1. Where, from long and violent efforts to overcome rigidity, the contractions of the uterus become feeble, and, though the soft parts may at last be relaxed, are insufficient to propel the foetus.

2. Where the efforts of the uterus, though slow, and not very powerful; yet, if sufficiently long continued, may effect the de-

livery, and the labour be complicated by any accident which would render its speedy termination desirable.

3. Where the head of the child has been separated from its body, and left within the uterus.

4. "Where the placenta has been prevented from being thrown off."

5. In dysmenorrhœa.

We have thus given a full account of this excellent essay. It is written in a perspicuous and unaffected style. The subject is well arranged, the reasoning ingenious and logical, and the matter well condensed.

S.

A Review of a Discourse on the Connexion between Chemistry and Medicine, delivered in the University of Pennsylvania, Nov. 5, 1818. By THOMAS COOPER, M. D. Professor of Chemistry in the Faculty of Arts in the University of Pennsylvania.

THE author of this discourse, is so well known to most of our readers, that whatever subject he ventures to discuss, cannot fail to excite a considerable degree of interest. Until we took up this pamphlet, we never imagined that even the most ignorant had any doubts of the intimate connexion between chemistry and medicine, much less should we have suspected that many of the faculty of Philadelphia, had not only embraced such an opinion, but that some of the professors of the medical school had taken pains to inculcate among their pupils, the strange and extravagant doctrine, that chemistry was totally unconnected with medicine. In a well written preface, the author proceeds to trace the real cause for these opinions, which he thinks originated here in the first instance, from a professor of high standing, who set his face against the utility of classical learning, in what he then called the improved state of education.

“ Unfortunately,” says the author, “ his opinions have had too much weight in this country ; and this genuine source of correct taste, and sure foundation of elegant literature, is now undervalued by the parents and the youth of America ; who can discover no use in wasting so many years in the acquirement of dead languages, which are forgotten, when the real pursuits of business imperiously lay claim on our time. It is true, Latin and Greek, imperfectly taught and imperfectly learnt, are soon forgotten ; it must also be conceded, that these languages aid little in judging of the qualities of merchandise, or in the arrangement of the finance of a compting-house : but it is not easy to see, how a Lawyer or a Physician, can occupy a respectable standing without them ; nor, how the charms of polished society can be enjoyed, without a reasonable knowledge of the languages, which for so many centuries have formed the passports to literary acquirement, and the subjects of allusion in almost every literary work. In Europe—in England, and in Ger-

many particularly, these studies are considered not merely as the useful, but the indispensable parts of polite education ; nor is a knowledge of ancient classic authors in good society there, less common than a knowledge of the most popular publications in the language of the country. Many of our best legal and medical authors—very many of the indispensable books of science—almost all our legal, and medical terms and phrases—the treatises of foreign jurists, the prescriptions of foreign physicians—are comprised in the dead languages : for they have not yet ceased to be the common means of communication in the republic of Letters. These sentiments are universally prevalent among what is usually called good society in Europe ; and they are falling into great disrepute in what is called good society in this country."

The author then proceeds to observe, that "it would be well, if we confined our neglect to ancient erudition ; but the most useful parts of modern science also seem to fall into contempt here, in proportion as they rise in reputation elsewhere."

In order to establish the grounds upon which this last observation is founded, the author refers to the doctrines of one of the most distinguished professors in the university, who has publicly and decidedly given it as his sentiment, that the chair of chemistry ought to be separated from the medical faculty, considering chemistry rather as an ornamental, than an indispensable part of medical education. Another physician, whose standing and talents render him deservedly high, took occasion in one of his lectures, also to express an opinion to the students of medicine, "That chemistry had been introduced into physiology, without any benefit whatever to that branch of medicine, and that in short, it was hardly applicable to the doctrine of disease." We confess that such doctrines and opinions, are so new and extravagant in the present state of science, that we should scarcely have thought they would have much influence on the minds of their hearers ; but it appears to have more weight than is generally imagined, and is very satisfactorily accounted for by the author of this discourse, in the following words : " when the gentlemen who are now professors, received their medical education twenty years ago, the science of chemistry was truly of very little use or application to physiology or pathology. It is no wonder, therefore,

that the opinion then formed of it, when they first entered on the practice of medicine, should prevail among them now—or that they should think lightly of a branch of science whose progress they have not traced, and whose present importance they are not sufficiently apprised of. How can they duly appreciate that knowledge which they have been at no pains to acquire, or inculcate its necessity upon others, when they cannot feel that necessity themselves?"

After pressing these arguments with his usual force and elegance, in order to combat what he emphatically calls such Heresy in medicine. The author, at the conclusion of his preface, makes the following appeal to those to whom his discourse is addressed, which cannot but make a sensible impression on such as are commencing the study of medicine.

"To such of the students who may peruse this pamphlet, I would beg permission to suggest, that every physician is by pretension and profession, a man of science and a gentleman: in his manners and deportment—in his modes and habits of thinking and of acting—well versed in every useful and every liberal kind of knowledge that may serve to qualify him, not merely for the practice of his profession, but for his intercourse with the more polished grades of civilized society, and for the instruction of the neighbourhood where he may be placed. The people expect from him all the results of a finished education: he cannot support the honour of his profession, if he should be deficient in this respect. Even, therefore, if the acquirements I recommend were not necessary, but ornamental merely, they ought to be cultivated by medical students in particular. I hope, however, to prove, that no man can be considered as a well educated physician, who is not well versed in medical chemistry: and that this is a branch of science of the first necessity in a medical education."

From this sketch of the author's views, in entering upon such a subject, we proceed to the contents of the work, which are arranged under the following heads.

"Brief History of Medical Theories.—Humoural Pathology.—Application of Chemistry to Physiology.—Pathology.—Poisons, and Nuisances.—Materia Medica.—Adulteration of Medicines.—Pharmacy, &c."

All of these are treated of with great science and learning, indeed so much so, as to create some surprise how it was possible, for a person whose education was not exclusively Medical, and whose studies were more strictly confined to general science, to have obtained so profound a knowledge of the different theories, which have occupied the minds of physicians, from the time of Paracelsus to the present day.

The first part of this discourse is employed in giving a rapid but accurate sketch of the different theories which have prevailed in medicine, and in stating the author's reasons for not considering any one of them sufficient alone to account for the phenomena of disease, but in giving his opinion on the value of each of these theories he seems to consider that which is called the humoural Pathology, and which admits that the cause of disease may exist in the fluids as well as the solids of the body, as standing upon too firm ground to be shaken without discarding altogether the doctrine of morbid action. These opinions are expressed in the following words and in our judgment are very conclusive.

"I do not ascribe to chemistry the sympathy of the skin with the stomach, or the headache of indigestion, or the pain down the thigh when the kidneys and ureters are affected, or the gout in the toe on drinking a pint of claret or champaign, or the affection of the left shoulder in hepatic obstructions, or the connexion of the digestive organs, or of animal heat, with the nervous energy—or a hundred more instances, that demonstrate the association and concatenation of morbid sympathies, too strongly to be doubted. The position I assume is, that when the humoural pathology prevailed, it sunk under the task of accounting for every morbid phenomenon: when it was rejected for morbid action in the living solids, the theorists who rejected it, did not understand it thoroughly, or they would not have rejected it in toto: that the present fashionable doctrine of morbid action will in its turn sink under the weight imposed on it, of explaining every appearance of disease; and that there is too much truth both in the one doctrine and the other, to reject either altogether."

But for instances to illustrate this morbid action in the system, and its influence on our theoretical opinions, we must refer the reader to the discourse itself which abounds with valuable observations. Having by various arguments shown that the fluids of the

body may be diseased themselves and may thus produce morbid action also in the solids. The author next proceeds to show the more immediate connexion of chemistry with medicine ; more particularly in its relation to physiology, pathology, mineral and vegetable *Materia Medica*, poisons, &c. each of those subjects are discussed distinctly, the first under the head of Animal Heat, perspiration, the circulating fluids in general, the bile and the urinary secretions, asserting, that to chemistry, and to chemistry exclusively are we principally indebted for whatever knowledge we possess on these subjects. And in order to show in what way chemistry bears upon the subject of pathology, the author refers to the prominent symptoms of those diseases which are prevalent in warm climates, such as bilious and yellow fever. Diarrhoea, Dysentery, Cholera, all of which are discussed with an accurate knowledge of medicine, but we cannot illustrate the author's opinions on those subjects more clearly than by quoting the following passages from his discourse, when describing the characteristic symptoms of bilious fever.

" Chemical experiments show, that the acids formed in the human body when strong, have this effect upon the bile. 1st, They turn it of a green colour : 2dly, They precipitate from it a resin, insoluble in the fluids of the body, and soluble in alcohol. (Berzel. 66.)

" By degrees, in the higher stages of the bilious type of fever such as the *yellow fever*, this acid forms the most constant, the most distressing, the most painful, and the most dangerous part of the disease. It is this concentrated acid, setting the teeth on edge,* and excoriating the lips, that acts on the stomach in yellow fever, disorganising and destroying the coats of that organ, and converting them into the dead matter of the black vomit.

" This peculiar symptom of morbid acid has been greatly neglected in the cure of these disorders, particularly by the foreign physicians who have practised here. A habit of considering the phenomena chemically, would have substituted alkaline diluents for acidulated ptisans ; and by counteracting that symptom which ultimately forms the most serious part of the disease, have saved many

* In the report of the Physicians of New Orleans respecting the yellow fever that prevailed in that city in the summer of 1817, they describe the acid of the stomach as *agacant les dents : excoriant le bouche* : and the ejected matter as green.

who have probably been injured by the acid medicines meant to promote their cure. This I have observed particularly in the reports of cases from New Orleans.*

"These remarks apply in a less degree to the milder forms of *bilious* fever, in all of which, insoluble resinous matter precipitated in the *primæ viæ*, and morbid acid formed in the stomach and intestines, produce a train of symptoms that a recurrence to the known facts of chemical affinity will alone be competent to combat. The same observations will apply to the numerous forms of *dyspepsia*: one of the most troublesome symptoms of this proteus disease, being a morbid secretion of acid in the stomach, which in its turn acts not only upon the contents of the intestines, but on the mouths of the vessels that open into them, either to pour out their contents from the pancreas and liver, or to absorb the fluids of the intestines into the lacteals. It is upon this principle only, that we can account for the use of magnesia, soda, and lime, in *dyspepsia* and its attendant symptom *cardialgia*."

From this view of the subject, the author concludes, and in our opinion with great justice, that no physician is justified in prescribing a remedy for any disorder whatever, but on enlarged views of the pathology as connected with the physiology of the system, either on the known properties of the living organ when stimulated into action or on just views of the chemical decompositions and combinations that may reasonably be expected within the system from the remedy proposed.

We next follow the author to another division of his discourse, in which he points out very clearly the necessity of a knowledge of chemistry in alleviating the sufferings of a patient who has taken poison, or in detecting the nature of that poison after death: the value of chemistry also in selecting and prescribing remedies for the cure of diseases. Remedies which are almost exclusively drawn from the vegetable or mineral kingdom, and which are all chemical preparations acting either as chemical stimuli to the

* When the yellow fever is at its highest grade, little hopes are to be entertained. Probably, if called in early, the best general treatment is, full bleeding: strong purges of calomel and jalap in doses to ensure the speedy effect: then cold effusions over the whole body; and afterwards saline cathartics, and alkaline ptisans.

living fibre or undergoing themselves chemical changes within the body.

These principles are so self evident, that we should scarcely think it necessary to dwell upon them were we not satisfied that the doctrine as taught by some of the professors, and as inculcated by some of the elder physicians, has had its influence not only on the medical students, but on those whose business it is to prepare those medicines which are prescribed by the physician. The author indeed alludes to this when on the subject of pharmacy, but he does not seem aware of the ignorance of chemistry which generally prevails among those who are called apothecaries, in whose hands are placed the important task of chemically preparing medicines of every description, nor can it be here superfluous to remark that until this branch of the profession is under more strict regulations, and until some sort of knowledge of the Latin language and of chemistry is required from the venders of medicines little confidence can be placed in their pharmaceutical preparations.

We have now taken a slight review of this very interesting discourse, which in a short compass embraces a vast variety of knowledge on a subject of more consequence than is generally imagined, indeed we have seldom met with a preliminary discourse on the study of chemistry which deserves to be read with so much attention.

M.

Erfahrungen ueber die heilung der krebsgeschwuere.—Von T. P. Westring, hon: swed: leibartzes Halle, 1817, p. 61 8vo. aus dem Schwedeshen ulersetyt soon K. Sprengll.

Observations on the cure of ulcerated Cancer. By T. P. Westring, physician to his Danish Majesty—Halle, 1817, p. 61 8vo. Translated into the German, by Curt. Spengel.

THE additions made to this work by the translator, consist of notices relative to the use of the *Calendula officinalis** by the ancient physicians and of the medicinal powers of *gold*, *lapis suillus* and mercurial fumigations. First; *Of the calendula officinalis*. This plant was known to the Greeks under various names. The first notice respecting its use in cancers is found in the writings of *Matthiolus*; and *Marcellus Cumanus* recommended this article in the treatment of mortifying ulcers—Towards the end of the 16th century it was a good deal used by the German physicians in the treatment of various diseases of women. *Tabernaemontanus* gave a more particular account of its medicinal virtues.—It was used in the form of extract, *aqua distillata*, oil, expressed juice and decoction.

2. *Of the modern use of gold as a medicine*—So early as the 16th century, gold was recommended by some as a valuable medicine. In latter times (1811) *Chrestien* in France, brought it again into use against venereal diseases—The preparations chiefly used are, an amalgam of gold and quicksilver; oxyde of gold, precipitated with an alkali, and the salt of gold given in the dose of 15-10 part of a grain with mucilage, or powdered charcoal. In Sweden, *Gadelius* and *Gahn*; *Ohdelius* and *Westring*, experimented with the same article.

Of mercurial fumigations. The Swedish Board of Health, first introduced these fumigations into the public hospitals in 1815. They were employed in primary and constitutional venereal affections; especially when the mercurial preparations had been ineffectually used. The mixture used, consists of cinnabar, one drachm, Arsenic alb: and sulphur aa gr. V.

Chemical analysis of the *calendula officinalis*. According to

* Garden Marygold.

Geoffroy the leaves contain nitrate of ammoniæ. According to Westring's analysis the plant contains a considerable quantity of mucilage; some albumen, tannin, and resin. The flowers are weaker than the other parts of the plant—The root is astringent. In the first and second degree of the disease this remedy is of little service—it is only in the third degree; when the cancer has become ulcerated, and when extirpation is but seldom effectual that the *calendula* exceeds every other remedy that has hitherto been known.

CASE I.

Excessively painful Ulcerated Scirrhous of the Uterus.

The patient, a widow aged 47 years, had suffered for a long time with cancerous tumours of the uterus, and had employed a vast variety of remedies ineffectually—She suffered under irregular menses; uterine haemorrhages—Spasmodic colic, excruciating pains, hectic fever, &c. On examination, the uterus was found to be enlarged; sunk down; very painful to the touch, and full of large tumours and ulcers discharging a fetid sanies. On the 12th of August, 1812, the author was called to see the patient, and ordered an injection into the uterus, of one ounce of the extract of *chærophyll: sylvest:* dissolved in a saturated infusion of the same plant, with an equal quantity of *flori* chamomile. This was repeated four times during the day, and at the same time $\frac{1}{2}$ of a grain of the *salt of gold*, with mucilage was rubbed in between the labii pudendi. In a few days her sufferings were evidently mitigated—She however still suffered much pain, to relieve which, an infusion of *calendula* was injected, and one sixth of a grain of the *salt of gold* rubbed in, as before—Upon this, she experienced the most remarkable relief; the tumours lessened in size; the pain abated, and the uterus rose again to its natural position.

She now continued the use of the injections made of the *calendula* and *chærophyll*: As she suffered the most excruciating spasms, with considerable fever at each monthly period, it was thought proper, in October to discontinue the frictions with the *salt of gold*;—and to give her pills of the extract of *calendulæ*, every

morning and evening. Of these she at first took six at a time, each weighing two grains, and gradually rose to the number of 16. In December, it was found on examination that the uterus had gained its natural position, and that the indurations and ulcers had become greatly lessened, with a total absence of pain and fetor. The injections and pills were continued daily until the following month of May—In the Autumn afterwards, they were resumed, and continued with a gradual improvement of the patient's condition, until in August, 1814, she found herself perfectly well. During the cure, the patient was kept on a milk diet.

CASE II.

A woman aged 38 years, of irritable temperament, who always menstruated very copiously, and after suffering an abortion, was frequently affected with violent uterine haemorrhages, and finally with leucorrhœa attended with pain in the region of the pubis—On examination, it was found that her uterus was affected with cancer.

This case was treated like the one just related, by injections of the infusion of *calendula* and *chærophyllo* ; in addition to which the salt of gold with the farina of starch was rubbed into her gums. After the use of 80 powders in the course of 40 days, the pains were considerably abated ; the discharge of blood had stopped ; the indurations had lessened, and the menses were regular. Afterwards the frictions with the gold had to be omitted, and she continued the use of the pills and the injections of the *calendula*. Under this treatment she was rapidly mending, and was indeed nearly quite relieved of her cancerous affection when she was attacked by nervous fever, of which she died. The following are two cases of cancer in the breast.

In the first, the cancer arose from the mal-treatment of a tumour in the breast. The ulceration was deep, and discharged much fetid sanies—Upon the internal and external use of the *calendula* the patient experienced a great deal of relief—The ulcer became clean, and the fever and pain abated—It was evident that the remedies employed were operating very beneficially ; but this pa-

tient also died of a contagious fever, before the remedies had had sufficient time to effect a cure.

In the second case, a cancer of the breast was treated in the same manner as the preceding one, and the cure progressing rapidly—This patient died of an epidemic flux—Another case is related where a patient who was in the most deplorable situation from the misuse of mercury in a venereal affection ; and which was considered as a hopeless case, was perfectly and speedily cured by the internal and external use of the calendula.

(Salzburg Med. Ch : Zeitung.)

Rapport fait à la Société Medicale, sur la fièvre jaune qui a régné pendant l'été de 1817. Par M. M. Gross et Garadin, 8vo. p. 65.

THIS is a very interesting account of the Yellow Fever, which prevailed so destructively in the city of New-Orleans, in the summer of 1817. The history of this epidemic, adds another proof to the many already existing of the indigenous production of the yellow fever, and of its being the offspring, solely, of a long continued and intense heat acting upon vegetable and animal matters, in connexion with moisture.

Notwithstanding the great mass of evidence, which has so often and so forcibly been brought forward in support of this opinion, there are still some physicians in our own country, and many in Europe, who cling to the persuasion, that the yellow fever is a monster of foreign birth, and endowed with the frightful property of contagion.

To such men, it would indeed, be useless to multiply proofs, in refutation of their opinions; for he who cannot be convinced by the powerful and eloquent reasonings of Rush, Caldwell, Potter, &c. on this subject, will hardly yield to the force of any additional evidence.

1. *Atmospheric Constitution.*

The months of April, May and June of 1817, were very rainy, the country around New-Orleans, remained for a long time covered with water. The tides of the lakes also rose higher than usual, the winds, which until the end of June, blew almost continually from the south, now suddenly shifted round to the north. A humid and stifling heat prevailed, during July and August. About the end of June, the thermometer stood at 92°. In July, it varied from 86° to 92°; in August, from 84° to 94; and towards the end of September, from 80° to 85°.

The barometer stood constantly at 29° and some trifling fractions; and the hydrometer pointed to from 15° to 25° of humidity.

2. *Invasion and Duration of the Epidemic.*

The epidemic manifested itself in July. Many symptoms of this disease had, however, been noticed as early as the latter part

of June, especially in the city hospital, *before* the arrival of a vessel from Havanna, which had lost a part of her crew by the black vomit, during its passage. The disease increased in its ravages during July; and acquired great malignity in August, on account of the arrival of a great number of Europeans and Americans at that time. In the beginning of September, a violent storm took place, upon which the epidemic abated its fury.—Weather variable until the 20th of this month; at which time the south wind began to blow anew. The heat again became very intense, and the fever still raged with violence, especially among those who had lately arrived. In October, it finally disappeared, after a violent tempest; still, however, reigning in some degree at the hospital, after it was extinguished in the town.

3. *Causes.*

New Orleans stands on the eastern shore of the Mississippi, in latitude $29^{\circ}, 57', 45''$, and $92^{\circ}, 28', 45''$, west from Paris.

This city, situated below the level of the river, stands upon a soft and humid soil, and is surrounded by vast marshes and cypress forests. When the river falls in the summer, it always leaves a large space before the city, covered over with mud and putrifying animal and vegetable matters. Strangers who had recently arrived, or such as had not yet become inured to the climate; young and robust men, of a sanguine temperament, or of a gloomy and timid disposition, were more obnoxious to its attacks, than the advanced in age, and of a feeble and delicate constitution, but full of courage and resolution. Pregnant women, generally suffered abortion, when attacked with the disease. The planters of the Antilles, the Creoles, and the inhabitants of the surrounding country, generally escaped the fever. A number of infants fell victims to this epidemic. Many persons died in neighbouring places, whither they had retired too late, without in a single instance, communicating the disease to others. Not one negro, is remembered to have had the disease.

The Predisposing Causes.

They were, in general, such causes as debilitated the system.

Description of the Disease.

When the disease had a regular process, its course was marked by three distinct periods.

First Period.

General indisposition, insurmountable depression—slight shivering, quickly succeeded by a lively and biting heat; insupportable pain in the forehead and temples; dull pains in the loins and in the extremities; eyes red and painful, fixed, covered with a glossy moisture, and very sensible to light. The countenance agitated, gloomy, and expressive of fear and terror; respiration short and laborious, and interrupted with frequent and deep sighs. Tongue frequently white in the middle, red and moist at its edges, sometimes covered with a brown crust in the middle, with red and dry edges; pulse full, strong, regular, and occasionally quite natural; carotids and temporal arteries pulsated strongly; uneasy tension of the epigastric region, and acute pain when pressed upon; nausea; ejections from the stomach of a greyish or rusty matter, acid, and excoriating the mouth and lips; bilious and mucous alvine discharges; frequently obstinate constipation;—haemorrhages, most commonly from the nose, and consisting of but a few drops; hypochondria swelled; urine sometimes in small quantity, at other times abundant; restless and agitated; a feeling of cold externally, whilst the internal parts seemed intolerably hot; moroseness, gloom, vigilance, the intellectual faculties entire,—so also the functions of the muscular system.

This lasted ordinarily from one to two days.

Second Stage.

Gradual abatement of the acuteness of the febrile symptoms; but the countenance still remains confused and terrified; skin begins to turn yellow, first in the eyes, under the chin, and at the edge of the lips, and spreading by degrees over the neck, breast and the other parts of the body; respiration more feeble and constantly interrupted by sighs; pulse depressed, but regular; pain in the epigastrium more acute, the slightest pressure upon it being

insupportable ; vomiting more frequent and more painful, the matter thrown up resembling coffee grounds, and nearly always of a sharp and acid nature, so as to excoriate the throat ; paucity of urine generally, or entirely suppressed ; stools mixed with yellow, green and black ; hæmorrhages from different parts of the body ; mind, and muscular system not much disturbed in their functions—subsultus tendinum ; convulsions and hiccough—delirium was rarely observed.

This second stage lasted commonly for two or three days.

Third Stage.

Epigastrium less painful ; vomiting less frequent ; but the patient throws up by eructation a quantity of matter resembling the dregs of ink : stools have a similar appearance, or resemble the washings of flesh—are often involuntary, and of a cadaverous smell—colour of the skin turns deeper, and often nearly black ; it is dry, parched, or covered with a cold clammy sweat ; the suppression of urine continues ; hæmorrhages more frequent ; the blood is black, dissolved, and smells disagreeably ; it often transudes through the internal surface of the mouth, lips, gums, &c. Petechiæ appear ; blisters become gangrenous ; the patient exhales an odour *sui generis*, which indicates a fatal end. In the midst of these fatal symptoms, the patient often possesses the full powers of his muscular system.—He rises from his bed, and is but slightly delirious ; he answers slowly, but pertinently ; he seems wholly insensible of his situation ; he feels well ; asks for victuals ; smiles when talking : but the deadly paleness of his countenance, the difficulty in the articulation of words, the dilated pupil, the fixidity of the eyes, the depressed, intermitting, gaseous, or almost imperceptible pulse, the small and stertorous respiration, evince the approach of death.

This stage lasts from two to three days.

5. Anomalies and Termination of the Disease.

The disease was not always regular in its course. Many patients died in the space of 36 or 40 hours from the time of attack. In the first stage, the sensibility and rending pains of the stomach, sometimes were greater than those of the head and loins. The

black vomit was not observed in every case. In the second stage, the *remission* of the violent symptoms, often inspired the patient with hopes of a happy termination ; but this was a deceptive calm, it soon passed away, and seemed only to hasten the fatal end. Many who died in the third stage, sunk under one of these portentous calms. Some died in convulsions ; and others experienced, a few hours before death, the most violent paroxysms of rage, so as to attack those who were about them, with fury. This fever never terminated by any critical evacuations. The efforts of the *Vis Medicatrix Naturæ*, were in vain looked for by the physician.—When the disease terminated favourably the symptoms generally diminished gradually ; it sometimes, however, ended with astonishing suddenness. At this period, the patient generally first began to feel the dangerous situation he had been in. The muscular power, which until now, were not much affected, appeared as if suddenly annihilated ; the debility was extreme, the urine was of a saffron colour, and an itching was felt over the whole body ; haemorrhages became less frequent ; the appetite mended ; sleep more calm, and finally convalescence was established. The convalescence was almost invariably slow and troublesome ; the stomach often remained very irritable for a considerable time ; constipation frequently obstinate ; sleep imperfect ; digestive functions often weak for a long time : and the yellowness of the skin disappearing slowly, notwithstanding the copious discharges of saffron coloured urine. The senses of convalescents were generally blunted ; the emaciation was great ; the voice weak ; the articulation of words difficult. A young man who had had the disease, died of a tetanic affection, from exposure to a cold atmosphere.

Prognosis. If in the beginning of the disease, a prolonged chill was connected with great prostration of strength and dejection of spirits, violent head-ach, restlessness, pain and drawing in of the stomach, vomiting and difficulty of voiding urine, the disease ran its course rapidly, and ended fatally.

Suppression of urine was always a mortal sign. It was invariably observed, that when this took place in the first stage, the patient died before the fifth day.

Yellowness of the skin appearing before the sixth day, was nearly always a fatal sign. The pulse could not be depended on ;

—In the second stage, after having been quite natural, it often suddenly became slow, gaseous, or intermitting. Haemorrhages from the eyes, nose, mouth and anus, in the *first stage*, evinced great malignity of disease ;—in the third stage, they were fatal signs.

When the skin and petechiæ turned brown or blackish, and the abdomen became tumid, with icy cold extremities, death was near.

Few recovered after the black vomit—convulsions in the third stage, were always fatal. In women, if the menses appeared in the *first stage*, it was favourable, but if they came on in the second and third stage, an unfavourable sign.

7th. Dissection.

The heat of the season prevented, in a considerable degree, the minute anatomical dissections, it was desirable to make.

In a man aged about 28 years, Drs. M. Martin and Wilson, observed the following morbid appearances. In the stomach, a blackish liquor resembling coffee grounds. The mucous membrane of this organ from the *cardia* to the *pylorus*, was covered with spots of a deep red colour ; the other portion of the intestinal canal had no unusual appearances. The liver was not changed ; the gall bladder very small, containing a deep green bile. The urinary bladder was dilated, containing ten or eleven ounces of a thick, pitch coloured urine ; its internal surface presented traces of inflammation. The thoracic viscera and the brain were in a natural state.

2d. In a person of robust make, aged 32 years ; skin universally jaundiced ; the following appearances were noticed. The stomach contained a yellowish liquor, mixed with brown flakes ; its internal membrane, and that of the duodenum, was covered with gangrenous spots ; the other portion of intestines shewed no morbid changes ; the liver showed traces of inflammation ; the gall-bladder was half full of thick green bile ; the urinary bladder was contracted, and contained a spoonful of very brown urine ; its sides were thickened, and the internal surface red and rejected. Nothing unusual in the viscera of the thorax, and in the brain.—*The gangrenous spots of the stomach and duodenum, did not extend deeper than the mucous membrane of the parts.*

Treatment.

A removal from the focus of the epidemic was the only preventative that could be relied on.

In the first stage of the disease, bleeding was at first employed, especially in young and plethoric patients ; this did not often answer the practitioner's expectations. If it was followed by a momentary diminution of excitement, it was almost always soon succeeded by such a prostration, as to hasten the fatal progress of the disease. Experience soon demonstrated, that during the violence of the epidemic, bleeding and vomiting were hurtful.—The curative means, found most beneficial during this period, were gentle aperients ; drinks acidulated with *crem. tart.* *tamarinds*, or the juice of lemons ; whey, emollient injections and purgatives —the cold bath did no good ; the tepid bath succeeded better ; it diminished irritability, and excited gentle perspiration.

In the second stage, the most active tonics were employed. The *potio riverii* sometimes lessened the vomiting, so that tonics might be retained. The application of a blister to the region of the stomach did no good ; sulphuric æther rubbed into the epigastric region, and opium taken internally, were most successful for allaying the irritability of the stomach. In general, little could be done to check the excessive vomiting.

Camphire, with musk, given in very strong doses, was a valuable means to calm the spasms, and to excite the functions of the skin. Sinapisms, and frictions, with slices of oranges and with vinegar, over the whole body, were advantageously used to the same purpose. Baths made of *Cinchona*, contributed to support the strength, and to check the passive haemorrhages ; clysters of the infusion of *cinchona*, and lemonade with muriatic or nitric acid, contributed to the same end.

In the third stage, the same treatment was continued ; it was, however, if possible, rendered more active than in the second stage. At this period, it was particularly important to obtain the confidence of the patient ; and show him that an interest is felt for his welfare. Hope, here, was a most powerful and grateful tonic.

We have now given a condensed translation of the first part of this report ; the second part contains the histories of a number of

cases of the yellow fever, with the method of treatment particularly adapted for their cure. The practice delivered here, appears to us extremely feeble; and would, we are persuaded, be of very little service in the treatment of the yellow fever, as it has been observed in this city, and in other places of this country, north of New-Orleans. In order to give a more particular view of the practice which was adopted by the physicians of New-Orleans, and most efficacious, we will take one of the cases at random.

Case. Mr. Darwin, attacked on the 19th of August, at first felt great pain in the forehead; eyes red and full of tears; a sensation of general uneasiness; vertigo succeeded by chills, which lasted about half an hour; acute pains in the loins, which forced cries from him on the slightest motion.

Infusion of linden tree, with acetate of ammonia; warm bath; two emollient and laxative injections.

2d day. Bad night; sleep fatiguing and interrupted by frightful dreams; depression of spirits; eyes red and sparkling; pupils dilated; respiration hurried; tongue whitish; mouth bitter; sighing frequent; skin moderately warm; pulse quick and soft; urine small in quantity, and brownish.

Ipecac. gr. xxx; produced four ejections from the stomach, of glairy bilious matter; and two stools of the same nature; lemonade and cassia and tamarind water, for drink.

3d day. Restless during the night; disappearance of the fever; eyes a little yellow; pains of the head and loins lessened; deep sighing; oppression of the pit of the stomach. Two bilious discharges from the stomach; one stool; very little urine.

Cassia and tamarind water; lemonade, with a little Madeira wine; two injections with inchorra and vinegar. 4th. day. Bad night; restlessness; tongue dry and heated, with red eyes; eyes and neck yellow; face a little coloured; respiration confined; hiccup; pulse small, and nearly perceptible; vomiting; epigaster more painful.

Infusion of serpentaria with wine, camphorated mixture with musk; frictions with lemon-juice and sal-ammoniac: two injections of camphorated decoction of bark. 5th. day. Vomiting a matter like coffee grounds; inferior extremities cold; petechiae; death, after a convulsion.

FOREIGN PAPERS, &c.

Observations on the Medico-Chemical Treatment of Calculus Disorders. By W. T. BRANDE, Sec. R. S. &c. 1819.

(From the Quarterly Journal of Science and the Arts, No. 12.)

(The following remarks have hitherto formed a part of my Lectures on the Materia Medica, and are now published at the request of many gentlemen who attended the course. The chemical history and treatment of Calculi will follow in a future number.)

If there be any branch of physic which can be called philosophical, it is that which relates to the treatment of calculus complaints ; for in it, the offending substances can be collected and analysed, and the effects of medicines unequivocally judged of by their increase, change, or disappearance.

There are very few cases in which chemical principles are successfully applicable to the treatment of disease ; but the only rational observations which have been given to the public concerning the causes and treatment of these affections, have originated with chemists, and chemical physicians. Of the remarks of Paracelsus, Van Helmont, Stæhl, Boerhaave and others of their school, it will be unnecessary to say more than that they are vague, incorrect and absurd ; though Fourcroy, with that useless diligence, which characterises many parts of his great work, has laid more stress upon their notions, than mere historical relation required. In 1776, Scheele pointed out the existence of a concrete acid in urinary calculi ; and that illustrious chemist may be

considered as the first writer whose observations on the chemical constitution of calculi, are entitled to any notice. In 1792, Dr. Pearson prosecuted the enquiry which Sheeble had opened ; and his researches were published for that year in the *Philosophical Transactions*. But it was in 1797, that the most important addition was made to our knowledge upon this very important subject, by the publication of a masterly paper by Dr. Wollaston, in which we are not only made acquainted with the existence of several new substances in urinary calculi, but also with some highly valuable facts, respecting the treatment of cases in which they occur. Yet with this light upon the subject, medical and surgical practitioners remained, with few exceptions, grossly ignorant, and continued to graft their own erroneous views upon the errors of their predecessors : they neglected the valuable body of chemical evidence which had been adduced, and till within these few years, scarcely any person appeared moderately informed upon the subject, apparently for the want of some connected popular view of all that had been done, so digested and arranged, as to be intelligible to medical men. This desideratum, Dr. Marcet seems to have supplied, in his *Essay on the chemical history and medical treatment of calculus disorders*, and the medical world, as well as the public at large, should feel much indebted for the perspicuous and useful manner in which he has fulfilled his task.

The object of the present essay, is to throw the most important facts connected with the chemico-medical treatment of these disorders, into a yet more popular form, with a view of exciting attention to the simple principles of their early treatment, and of showing the dangerous consequences of delaying an easy prevention, where cure is impossible, except by the manual operation of the surgeon.

In the year 1808, I undertook, at the request of Sir Everard Home, to examine the collection of urinary calculi contained in the splendid museum of the college of surgeons ; and the observations which that examination suggested, were presented to the Royal Society, with the addition of some valuable remarks by Sir E. Home, and the whole honoured by a place in the *Philosophical Transactions* for 1806. In some subsequent papers, also presented to, and published by that learned body, we have joint-

ly prosecuted different branches of the same enquiry; and in the present digest, I propose to give a sketch of all that is important in these papers, illustrated by such other facts and observations, as have since presented themselves.

SECTION I.

Some general observations on the early symptoms of Gravel, and on the modes of treating them.

It is of the utmost importance, that the early symptoms of gravel should be carefully attended to; for we are often able, with little difficulty, to check their progress, and to form useful anticipations of the probable duration and extent of the complaint. It is in this stage, and this only, that we may rationally speak of solvent medicines; and that it is really in our power to prevent that kind of accumulation which ends in stone, either of the kidney or bladder. The only medical writer who has candidly and sensibly discussed this very important part of our present subject, is, as far I know, Dr. Marcket, in the last chapter of his valuable essay already quoted; but as my own views upon this subject, differ in some points from those which he has there propounded, I shall beg leave to state them in general terms.

It is necessary to bear in mind, that of the numerous substances contained in the human urine, there are rarely more than three which make their appearance in the form of deposit or gravel; these are phosphate of lime, phosphate of ammonia and magnesia, and uric acid. The two former substances constitute a *white* sediment, the latter forms a *red* deposit; and it is above all things necessary, clearly to distinguish between the two, and not to confound the thing, as many practitioners are apt to do, under the name of *gravel* or *sand*. The urine, in its healthy state, is always an acid secretion; and this excess of acid retains the earthy salts, above alluded to, in a state of solution; but this inherent or natural acidity of the urine is diminished by disordered digestion, irregular secretion, particular food, or improper medicines, a tendency to form the w immediately ensues. When from any cause, this w

observed, the internal use of acids will, in most cases, diminish, or remove it; this is a fact of the utmost importance in its treatment, for which we are indebted to the discoveries of Dr. Wollaston, in this branch of chemical medicine.

Concerning the white sand, there are two questions of importance. The first relates to the circumstances of its appearance; the second to the mode of treating it.

White sand is very frequently symptomatic of disordered digestion, and is apt to appear in any case where excess in eating or drinking has been committed. It often seems to be produced by the free use of amylaceous or farinaceous diet. It may always be abundantly formed by alkaline medicines, and persons who habitually drink soda water, or take magnesia, are frequently voiding it. Its appearance, in the latter cases, has often led to serious errors. I have known soda water exhibited in a case of a stone in the bladder, produce abundance of white sand, which the ignorance of the patient, and his medical attendant, led them to refer to the solvent power of the medicine upon the stone, which they thought was gradually giving way, and being voided; whereas great mischief was doing, by giving the urine more than its usual tendency to deposit the phosphates, and consequently to augment the size of the calculus; for it deserves particular remark, that the urine has a natural tendency to deposit the above-mentioned phosphate upon any extraneous body in the urinary passages, and often upon the inner coat of the bladder, if it be at all diseased.

The use of magnesia will also occasion the deposit of the phosphates by the urine;—and I have heard the white sand described as magnesia passing off by urine.

The tendency of the urine to deposit white sand whenever its natural acidity is diminished, as shewn by the addition of a little alcali to recently voided urine, which immediately throws down a white powder.

The acids naturally in excess, or uncombined, in healthy urine, and which may be regarded as holding the earthy phosphates in solution, are the phosphoric, the uric, and the carbonic. Berzelius has stated the lactic acid to be one of these; but my own experiments do not induce me to coincide in the opinion of that active chemist. Dr. Marcket, has controverted my idea respecting the uniform presence of carbonic acid, (Essay, page 159, note)

but, whenever I have made the experiment in the way he mentions, that is, by exposure under the exhausted receiver of the air pump, I have procured it in some quantity ; and whenever I have added baryta water to recently voided urine, the precipitate immediately separated, has contained carbonate of baryta.

The appearance of white sand does not seem deserving of much attention, where it is merely occasional, and where it follows indigestion brought on by accidental causes ; if, however, it invariably follows meals, and if it be observed in the urine, not as a mere deposit upon cooling, but at the time the last drops are voided, it becomes a more serious disorder, for it is sometimes the forerunner of other forms of the disorder ; sometimes it creates much irritation, and sometimes may even collect and concrete into a calculus, more especially if the complete evacuation of the bladder does not take place. I have known it considered as the *effect* of irritable bladder, where it has, in reality, been the *cause*.

In these cases then, the best mode of treatment, both for cure and prevention, becomes the next subject of enquiry ; and acid medicines are, in most cases, properly and effectually resorted to. It will first be right to consider the *kind* of acid most effectual, and afterwards to notice cases, in which acids are hurtful.

The mineral acids, namely the nitric, the sulphuric, and the muriatic, have each been employed ; and there are, perhaps, particular cases, in which one is more proper than the others ; but they are all of them improper, in cases where there is much irritation of the urinary passages ; and as they are apt to produce this, though effectual in checking the formation of white sand, they require to be cautiously exhibited, and their effects prudently watched over. The *nitric acid* may be exhibited in doses of from five to twenty drops night and morning, or thrice a day.

It may be taken in plain, or in barley water. From ten to thirty drops of the diluted sulphuric acid, and from five to twenty of the muriatic acid, may be taken in the same way ; that is, diluted till they become palatably acid.

Of these acids, the nitric is perhaps most apt to disagree, and to occasion those symptoms of indigestion, which are announced by flatulency and eructations ; and in a few particular cases, its long continued use has rendered the stomach reluctant as to food ;

though many instances might be cited of its tonic effects, as a promoter of digestion and increaser of appetite.

The sulphuric acid may most properly be termed a *tonic*; it generally admits of being longer preserved in, than either of the others; it seldom gripes or nauseates; and almost always promotes the functions of the stomach, where they are sluggish or irregular.

The *muriatic acid* agrees in most cases, with the stomach, but not so with the bowels, which always become more relaxed during its use, than where the other acids are employed; this circumstance, however, often recommends it, for constipation very frequently attends the state of the body, which favours the formation of white sand; and hence aperient medicines are alone adequate, in some cases, to suspend or prevent the disorder.

Where the mineral acids agree, they are usually very effective, and in a few days they diminish, or entirely prevent the formation of the sabulous deposit; but where they disagree, they rather increase the quantity, or they tend to the production of a mucous secretion, probably from the coats of bladder, which envelopes, and is voided with the sand; and which, in particular cases, may certainly tend to increase the risk of its agglutinations, and of the formation of a concretion in the bladder. The mineral acids too, almost always disagree with children, who are equally liable with adults to an increased secretion of the phosphates, and in whom prompt and effectual treatment is equally requisite to prevent the formation of the stone in the bladder.

Here then recourse must be had to another mode of treatment, namely to the vegetable acids.

The *tartaric acid*, either in its pure form, or as it exists in *cream of tartar*, may be used in pretty liberal doses; of the former, from five to twenty grains, and of the latter, from twenty to forty or sixty grains, may be used, either dissolved in barley water, or administered in any convenient vehicle. The *cream of tartar* is more apt to relax the bowels, than the *tartaric acid*;—a circumstance, which, as has been hinted above, often tends to its beneficial efficacy.

The *nitric acid*, however, seems on the whole, preferable to the *tartaric*; it may be given in the same way, in doses of from five

grains to half a drachm ; it rarely proves inconveniently purgative, and is very effectual in modifying the secretion of urine.

Cases are by no means uncommon, in which a white sabulous deposit in the urine, often going to a great and alarming extent, appears symptomatic of, or in some way connected with irregularity of the biliary secretion ; pain in the region of the liver, sallow complexion, whitish brown and dry tongue, are its usual concomitants in these cases ;—and there is a very troublesome irregularity of bowels, generally tending to costiveness of an obstinate kind ; sometimes succeeded by, or alternating with relaxation. I have known persons returning from warm climates, in this predicament, and upon being questioned as to their complaint, gravel and sand are usually uppermost in the mind. They often have recourse to the solvents of empyrics, which, with very few exceptions, are strong alcaline solutions ; or they consult medical men, who, hearing of the sand, and inadvertent as to its kind, prescribe soda water, solution of potash, magnesia, and the like ordinary preventives.

This alcaline treatment invariably does harm ; the patient's digestion, already feeble, becomes more impaired ; the sand previously, perhaps, small in quantity, is rendered abundant ; the bowels pass from occasional to constant irregularity, and every symptom becomes slowly, but mischievously, and in many cases, irretrievably augmented. Cases of this kind, I describe with the more confidence, having seen several. I allude to them now, as particularly improper in most cases, for the mineral acids in large doses ; whereas by the vegetable acids, they are always greatly benefited.

But in these, and in a number of similar cases, the best and simplest plan of treatment, is not to employ medicine, so much as diet ; to adopt a general acid system, to abstain from soda water, and all alcalies ; to refrain from malt liquor ; to take weak lemonade, and an occasional glass of cyder as ordinary drink at meals ; if accustomed to wine, to prefer champaign and claret, to madeira or port, but to take little of either ; if the bowels remain constipated, to take a drachm or two of Epsom salt in a half pint tumbler of luke warm water, in the morning fasting, or what is more pleasant, to stir a tea-spoonful of magnesia into an occasional glass of sour lemonade ; to eat salads and acid fruits,

and more especially oranges, which in this state of things are an heroic remedy.

I have said that there are few cases in which the vegetable acids, properly administered, produce an aggravation of the symptoms, or when they can be said to disagree; yet such cases do occur, and a very copious deposition of white sand shall be attended with a peculiar irritability of bladder (independent of calculus, for those cases I propose afterwards to consider) which is aggravated by any of the above-mentioned acids, and yet in which they are most decidedly indicated. In a paper which I presented to the Royal Society in 1812 (Philos. Trans. 1813, p. 213) and in which I have detailed some cases illustrative of the operation of acids in preventing the white deposit, I have spoken of the beneficial effects of *carbonic acid*, where, from peculiar circumstances, the other acids disagree; and since that period, several cases have occurred, attended by equally beneficial results. The mode of exhibiting this acid, is either simply dissolved in water, in which case it may be easily prepared by the patient in a *Nooth's apparatus*, or procured from the dealers in artificial mineral waters; or it may be administered in the form of a saline draught in the state of effervescence; as by dissolving thirty grains of carbonate of potash, and twenty grains of nitric acid, in separate tea-cups of water, mixing the solutions in a large tumbler, and drinking the whole during effervescence.—This dose may be repeated two or three times a day, or oftener, if expedient.

It may be asked, in what manner the acids which have been mentioned, act? Do they pass off by the kidneys, and produce a direct effect upon the urine, by rendering it more acid and capable of retaining the phosphates in solution; or do they act indirectly, upon the digestive and assimilating organs, so as to modify the action of the kidneys, and consequently to affect their secretion. In my communications to the Royal Society, I have briefly discussed this question, which, though undoubtedly curious, does not appear practically important; and I have now little to add upon the subject.

The experiments which I made on the passing off of carbonic acid by the kidneys, I have since repeated with similar results. The recently voided urine was introduced into a phial, furnish-

ed with a bent tube, passing into lime water, and the whole apparatus put under the receiver of the air pump. I invariably found carbonic acid revolved during the exhaustion, and observed its quantity to be greater after drinking liquors containing it in an uncombined state. I am quite aware of the uncertainty of experiments of this kind, and, of the ever varying composition of the urine, but I cannot give up the opinion that the existence of a large quantity of carbonic acid in the stomach, is connected with its secretion in the kidneys.

I have stated above, that the uncombined carbonic acid of the urine, often acts an important part in retaining the earthy phosphates, but more especially the ammoniaco-magnesian phosphate, in solution ; and its escape is, in these cases, attended by the deposition of the triple salt in the form of a film upon the surface of the urine, the cause of which was first pointed out to me by Dr. Wollaston.

I have already adverted to the importance of attending to the diet, in cases of white sand, and to the necessity of keeping the bowels open by the occasional use of mild aperients, where the acid regimen alone is insufficient. It frequently happens, I believe, that much of the benefit of the mineral acids may be referred to their more tonic effect, to mending the digestion, and thus improving the general state of health. The febrile affections of children are very frequently attended by an apparently alarming deposit of white sand in the urine, and a dose of calomel will often carry off both the fever and sand. It is thus too, that air and exercise, bark, bitters, and mineral tonics, are often successfully resorted to, in urinary complaints of the kind we have been considering.

Having now considered the nature of the white sand, and the mode of treatment to be adopted in regard to it, we may advert to the composition of the red sand or gravel, and to the means which are most effectual for its prevention and cure. Here, as in the former case, distinction must be made between those cases, in which the sand is actually *voided*, and in which it is deposited, after some hours, by urine which at first was clear. The appearance of the red sand, in the former case, is an alarming indication of a tendency to form calculi ; in the latter, it is often

a temporary symptom of indigestion ; but yet, if it frequently occurs, means should be strenuously adopted for its prevention.

Since the discovery that the red sand consists of uric acid, more or less pure, and of the solubility of that acid in the caustic fixed alkalies, these substances have been in vogue as solvents.—The important fact, however, was soon made out, that the alkaline sub-carbonates, and carbonates, were equally effectual, and less apt to disagree with the stomach, than the pure alkalies ; and as in them the uric acid is not soluble, it becomes pretty evident that the benefit of alkaline medicines was not rationally referable to their solvent powers. Indeed, where the caustic alkalies are taken, they could never reach the urine in a caustic state, but would naturally combine with the carbonic or other acids of that secretion.

Experience having sufficiently shown the efficacy of the alkalies and alkaline carbonates in preventing an increased secretion of uric acid, the first question that arises is, as to the kind of alkali to be preferred, and the state in which it should be exhibited.

Soda seems, by common consent, to be preferred to potash ; and there can be little doubt, that although it will be most effectual in a pure form, it is most prudent to use it in its highly carbonated state, as it is sold under the name of soda water : for it may be longer persevered in, and is less apt to injure the digestive organs in that state than in any other. It deserves remark, however, that much of what is sold under the name of Soda Water, contains scarcely any soda, but is merely water impregnated with fixed air ; and further, that it is very apt to be contaminated by copper, zinc, or lead, arising from the vessels in which the condensation is carried on. These considerations, which are very easily discovered by proper tests, have been adverted to by Mr. Pepys, in his " Description of an improved Apparatus for the Manufacture of Soda Water," published in the 4th volume of this Journal.

But, though soda water is, in most cases, very effectual, in others, it is certainly less so than a similar solution of potash ; and I have seen cases in which the latter alkali has dispelled symptoms that withstood the operation of the former. This fact has been adverted to by Sir Gilbert Blane, in his paper on the effects of large doses of vegetable alkali in gravel. (*Transactions*

of a Society for Medical and Chirurgical knowledge.) He has there, also proposed the convenient method of partly saturating the alkali with lemon juice or citric acid, and has dwelt upon the advantages of combining opium with it, which are certainly great in cases attended by irritation, or other symptoms calling for the use of sedatives.

Ammonia, and *sub-carbonate of ammonia*, are alkaline remedies of considerable use in many cases of red gravel; they may be resorted to with advantage, where symptoms of indigestion are brought on by the other alkalies; and appear to be of great use in that form of red gravel which is connected with gout, and which, in gouty patients, often alternates with fits of the disease; the joints and the kidneys appearing to be affected by turns.

In a paper which I communicated to the Society for the improvement of Animal Chemistry, in the year 1800, and which has a place in the Philosophical Trans. for 1810, I have detailed the advantages of *magnesia*, as a preventative of uric gravel; and subsequent experience, which has been pretty ample, completely justifies the character I have there given it. I do not mean to propose it as excluding the alkalies; it is, indeed improper, in many cases, where they may be properly employed; but where potash and soda have been so long employed as to disagree with the stomach, to create nausea, flatulency, a sense of weight and pain, and other symptoms of indigestion, magnesia may be adopted with the greatest chance of success.

The doses of the different alkaline remedies that have been enumerated, and the modes of exhibiting them, may next be briefly noticed.

The caustic alkalies are best taken in any mucilaginous vegetable infusion; barley water or water gruel for instance; and their nauseous flavours are much covered with liquorice.

From five to fifty drops of the liquor potassæ of the London Pharmacopeia has been called a dose. From ten to twenty drops may be considered an average dose, taken night and morning, or thrice a day, in a glass of barley water. A drachm of the carbonate of potash, as advised by Sir Gilbert Blane, or of the carbonate of soda, may be dissolved in two ounces of water sweetened with honey, and taken during the effervescence, occasioned

by the addition of half an ounce of lemon juice, twice or three times daily.

Soda water should be kept in the shops, single, double and treble; the first should contain one, the second two, and the third three drachms of the crystallised sub-carbonate in the pint, and from one to three half pints of either, may be taken daily, as it proves agreeable or efficacious. A portion of the alkali in the strongest, may be conveniently neutralized by adding a tablespoonful of lemon-juice to each half pint tumbler, which renders it more palatable.

From half a drachm to two drachms of the solution of ammonia, of the pharmacopeia may be taken in a sufficient quantity of water; but the sub-carbonate is as effectual, and has the advantage of being administrable in the form of pills, in which it may be united with some bitter extract; none better than that of chamomile. Twenty grains of the alkaline sub-carbonate, and a drachm of the extract may be made into twenty-four pills, two or three for a dose, twice or thrice a day.

Magnesia may be either calcined, or sub-carbonate; the latter is generally preferable, except where the stomach is distended by wind, and in that case calcined magnesia should be used. The dose is from ten to thirty grains of the calcined, and from twenty to forty or fifty of the sub-carbonate, or as it is often called common magnesia. This remedy is particularly commendable, where the alkalies have been employed for a long time, where they excite flatulency and indigestion, or disagree with the bowels, or where the red sand continues to be formed, even during their copious use. As magnesia sometimes collects in, and clogs the bowels, their state should be attended to during its use, and any accumulation which may have occurred, occasionally moved off by a mild aperient, or by the occasional use of acids, where they are admissible. The case described by my brother, in the first volume of the Journal, will give an idea of this effect, and point out the requisite caution in the use of magnesia.*

* Magnesia may be dissolved in excess of carbonic acid, and administered in the form of magnesia water, which is an excellent substitute for soda water. Some years ago, Mr. Schweppe, at my request, prepared it in this form.

The next subject of enquiry is the mode in which the alkalies operate.

That it is not by a solvent power upon the gravel after it is formed, is evinced by the action of the carbonates, and by that of magnesia, which though incapable of dissolving uric acid, are as effectual in checking its formation as the caustic alkalies.

It would appear then, that the benefit derived from these medicines, must be principally ascribed to their actions upon the digestive organs, where, by preventing the formation of, or neutralizing and combining with acid matter, it is probable that they prevent its secretion in the kidneys. Nevertheless the alkalies undoubtedly do pass off by the urine; and in a paper already quoted, (Philosophical Trans. 1810.) I have detailed some experiments illustrative of this subject, the results of which are extremely important, as connected with the treatment of calculus affections, for they show the danger of administering alkaline remedies, where there is a tendency to the production of the phosphates; and the likelihood of producing the deposition of white sand, by improperly persevering in their use, after the formation of the red sand has been checked.

The above are the principal observations which have occurred to me, connected with the symptoms and treatment of the white and red sand: the first object should be to ascertain the nature of the matter voided; the next, to select the most appropriate acid or alkali, and in either case to watch carefully over their effects, since the acids, after having removed the super-abundance of the phosphates, will sometimes induce the excess of uric acid; and nothing is more common than the appearance of white sand during the use of alkaline medicines.

Cases are by no means unfrequent, in which the sabulous deposit of the urine consists of a mixture of uric acid with the phosphates; as far as my analysis has gone, the sediment of inflammatory disorders is usually of this kind; it is very frequent in the urine of those persons who habitually indulge in the use of wine, and not uncommon in jaundice and other affections of the liver, where a large quantity of alluminous mucus often accompanies it. This form of the disorder is generally alleviated by general, rather than particular treatment; I mean by particular attention to the state of the stomach and bowels; by purges, and

by tonics. I have heard nitric acid recommended, upon the principle of its dissolving both uric acid and the phosphates; and in some cases which were under Dr. Penberton's care in St. George's Hospital, and of which I have preserved notes, it appeared particularly efficacious: I am, however, induced to refer its efficacy rather to its tonic, than to its solvent powers. Indeed, it cannot be too often repeated, that in all cases of urinary sand and gravel, it is necessary to pay particular attention to the general state of the patient's health, and along with the medicines usually called solvents, to pursue a tonic and invigorating plan in respect to the stomach.

The best diet for those who suffer from the excess of uric acid, and from red gravel, has been a subject of discussion with most writers upon this disorder, and animal vegetable food has been alternately extolled and recommended. I should not hesitate in these cases, to recommend the adoption of a vegetable diet, for independently of the valuable observations of Dr. Wollaston, connected with the subject (Philos. Trans. 1810.)* I have known a week's abstinence only from animal food relieve a fit of uric gravel, where the alkalies were of little avail; and in other cases the same plan has been most successfully adopted; at the same time, it must be remembered, that if flatulency and other stomachic symptoms arise from the want of usual animal diet, mischief will in most instances result.

The observations which I have now made, are intended to refer to those cases of sand and gravel, which are independent of the formation of calculi, and unconnected with any sabulous accumulation in the kidneys or bladder. In these cases new questions and difficulties arise, to which it will next be proper to advert.

(*To be continued.*)

* In this paper, Dr. Wollaston has alluded to the quantity of uric acid contained in the excrement of birds feeding solely upon animal matter.—The following is a curious analogous fact. Mr. Barrow lately put into my hands for examination, a red matter, which tinges the snow in high latitudes, collected by Capt. Franklin, in the late polar expedition. It was supposed to be the seeds of a lichen, but I found it to contain uric acid, separable by potash, and precipitable from its alkaline solution by muriatic acid in the form of a yellow powder. The uric acid is mixed with what Dr. Marcet has called *Xanthic Oxide*.

WE are indebted to Professor Chapman, for the following paper of Dr. Thomson, on what he terms the Varioloid Diseases. It is an exceedingly interesting paper, and merits very particular attention. A disease is now prevailing at Lancaster, in this state, which has excited considerable controversy among the physicians of that place, whether it be small-pox or chicken-pox. We are of opinion that this disease possesses much of the character of the varioloid disease described by Dr. Thomson. In our next number we expect to give a particular account of the disease as it now prevails at Lancaster.

EDITOR.

Some Observations on the Varioloid Disease, which has lately prevailed in Edinburgh, and on the identity of Chicken-Pox and modified Small-Pox, in a Letter addressed to Dr. Duncan, Junior. By JOHN THOMPSON, M. D. F. R. S. E. consulting Physician to the Edinburgh New-Town Dispensary, professor of Surgery to the Royal College of Surgeons, Regius Professor of Military Surgery in the University, and Surgeon to the Forces.

DEAR SIR,—I beg leave to communicate to you the results of some observations which I have had occasion to make, in attending to the progress of the eruptive varioloid disease that has lately prevailed in Edinburgh, and of the occurrence of which, in the military hospitals, my friend Hennen has given so accurate and interesting an account in the present number of your Journal.

My attention was first called in a particular manner to this disease by the cases of it which occurred in the Depot Hospital, and by the cases in the Castle, produced by inoculation, with the matter taken from Mr. Hennen's son. Since that period I have seen, in various parts of the town, seventy-two cases of eruption, including those which have been detailed by Mr. Hennen. Of this number eight have had the disease after having passed through the small-pox, twenty-seven after having had the cow-pock, two have had the disease co-existent with cow-pock, and thirty-five, including the six children who were inoculated in the Castle, had

not passed through either small-pox or cow-pock. Three of the children affected with this disease after cow-pock, had previously passed through an eruption of the same sort, and in one of these, I have had the best opportunity to observe, that the disease has each time exhibited the appearances which have been supposed to be the characteristic of chicken-pox.

I The greater part of those affected with this disease, who came first under my notice, had previously passed through either small-pox or cow-pock, or had the disease communicated to them by inoculation. In watching the appearances and progress of the eruption in these persons, I was for a considerable time inclined to regard it as chicken-pox, till having an opportunity of observing its severity and fatality in those who had not undergone small-pox or cow-pock, I was compelled to abandon that idea, and to believe that in all the different forms under which that eruption has appeared, it could be no other than the small-pox.

This epidemic has attacked three different classes of persons, 1st. Those who had passed through small-pox; 2d. Those who had had cow-pock; and 3d. Those who had had neither small-pox nor cow-pock, and in all of these it has appeared to possess some common characters. It has usually commenced in vesicular form, or in a papular speedily becoming vesicular, and has become pustular only in some cases in its progress. The pustules have appeared sometimes with, and sometimes without a central depression. The eruption has been irregular in size and form, as well as in the place of its first appearance, and in most instances, it has appeared to occupy only the surface of the skin. It has almost in all instances come out in successive crops, some of which have appeared on the body after the eruption was at the height on the face. It has, in general, appeared even in severe cases, to have arrived at the height on the face by the sixth day of the eruption, and in the milder, not unfrequently by the fourth or fifth day. The fluid contained in the vesicles and pustules, has, in a great number of instances, appeared to be lymph rather than pus, even to a late period of the disease, and has generally dried into horny scabs covering tubercular elevations of the skin, which, in several instances, have been followed by pits or depressions of that texture. In the decline of the eruption, vesications upon an inflamed basis of a greater or less extent,

have frequently appeared upon the extremities, generally filled with lymph, but in a few instances with air; and in some instances, small abscesses have formed in the subcutaneous texture. This eruption has rarely had any of the smell peculiar to small-pox. It has produced but very little temporary blindness, and has seldom been accompanied by the symptoms of secondary fever.

In four of the eight patients who had had small-pox, this epidemic has appeared in a highly aggravated and somewhat malignant form. Comparatively but few, I believe, have ever recovered of primary natural small-pox who had them in number and form similar to those described in Nos. 12, 13, and 14, of Mr. Hennen's cases. The disease in his 4th case, though severe, could not be said to be malignant, and in the other three instances it has been so mild, and of so short duration, that, had these cases occurred before the vaccine inoculation was known, no practitioner of experience would, I am convinced, have hesitated in pronouncing them to be distinct and unequivocal cases of chicken-pox.

Of the twenty-nine patients who had undergone cow-pock inoculation, no one has died, and three only have had the disease in a very severe form. In by far the greater part of this class, the eruption has been papular or vesicular, without becoming distinctly pustular, and when it has become so, the pustules have appeared chiefly on the face, while the disease has remained vesicular on the rest of the body. In some of these cases the eruption has been at the height by the third, in others by the fourth, in most by the fifth, and in the severer, by the sixth or seventh day. I have not been able to discover in the appearances, progress, or termination of the disease, as it has occurred in those who had been vaccinated, any symptoms by which I could distinguish it from the three varieties of chicken-pox described by Dr. Willan, or from the numerous cases of that disease which I had seen before, and since the practice of vaccination has been introduced.

Of the twenty-nine patients who have had this disease in the natural way, without having previously passed through cow-pock or small-pox, nine have died. In five of these fatal cases the disease was of the kind which has been so well described by Dr. Rogers of Cork, and by the late Dr. Walker of this place, under the name of malignant crystalline or water-pox. In two of these,

petechiæ or livid spots made their appearance before death ; three died on the 6th, and two on the 8th day of the eruption. In the other four cases, the disease was pustular and confluent, one died on the 9th, two on the 12th, and one on the 18th day.

In thirteen of those twenty-nine cases, the disease, though it has not proved fatal, has been more or less severe. In several, particularly in adults, it had from the first the appearances which are usually described as characteristic of genuine small-pox, sometimes of the distinct, and at other times of the confluent kind. In others, the disease had at first the appearance of aggravated chicken-pox, rather than of small-pox, the eruption coming out in successive crops, and being chiefly vesicular in its first stages, and becoming only pustular in its progress. In very few of the severer cases have there been any symptoms of secondary fever, and these have been mild and of short duration.

In the remaining seven cases the disease was remarkably mild, so much so as to resemble chicken-pox, or the inoculated rather than the natural small-pox. In these there was comparatively but very little eruptive fever, and in three or four instances the disease seemed to be at the height by the fourth or fifth day. Had not these cases occurred in situations where the malignant small-pox existed, I should not have been disposed, from the appearances which manifested themselves, to believe that they could have originated from the infection of genuine small-pox.

The history of the progress of this contagion in the military hospitals has been so fully and circumstantially related by Mr. Hennen, as to render it quite unnecessary for me to enter upon it. I shall only remark, that there seems no reason to doubt, that all the cases of mild and malignant small-pox which have occurred in the Castle, were derived from matter taken from Mr. Hennen's son. He and his brother appeared to have caught the disease from Sergeant Williamson's son, and this boy again from the patient Wright in the Depot Hospital, who passed through a disease which was regarded as distinct and mild chicken-pox. I may add, that, in one of Mr. Hennen's children, the disease was so mild as to escape almost unobserved ; and in the other, from whom the matter was taken for inoculation, though the constitutional symptoms were at first severe, the eruption appeared to me to afford, in

every step of its progress, one of the best marked cases of chicken-pox which had ever come under my observation.

Though in other parts of the town it has been more difficult to trace accurately the progress of the contagion of this epidemic, yet, in several situations, the mild and malignant form of the disease, have appeared evidently to produce each other. This was particularly obvious in two situations where the disease prevailed extensively, in the different floors of a tenement on the Castle Bank, and in those of another tenement on St. Leonard's Hill. From the fatality of the disease in these two situations among the children who had not been vaccinated, and its aggravated form even in some of those who had been vaccinated, no room was left for doubt that the disease was malignant small-pox, though in both situations several children passed through it in a form so mild and so accurately resembling chicken-pox, as in my opinion, not to be distinguishable from that disease. I have been informed of the mild form of the disease producing the malignant in unvaccinated persons in three other places of the town besides those I have mentioned, and that too in families in the better condition of life. I hope the different medical practitioners who have witnessed the occurrence of this important fact, will be induced to communicate to the public an account of the circumstances in which they respectively saw it occur.

It was my having seen the disease at first only in its mild form, and among those who had had small-pox or cow-pock, that induced me to believe, for a long time, that even the aggravated cases which presented themselves to my observation, could only be cases of chicken-pox; and I was the more disposed to take this view of it, that I had formed a similar judgment with regard to an epidemical eruptive disease, which I saw prevailing extensively in the villages of Colinton, Slateford, and Currie, during the year 1809. The present epidemic appeared to me to resemble in every particular that which I then had occasion to see, and which, from a careful comparison of its symptoms in the milder cases, with Dr. Willan's description of chicken-pox, I had concluded to be that disease. I was the more confirmed in my belief of these epidemics being chicken-pox, from my observing at both periods two symptoms occur in several patients which have been regarded by Dr. Willan and others as diagnostic of chicken-pox. I allude to

the succession in the crops of the eruption, and the formation of vesications of greater or less extent, resembling those made by scalding water, occurring among, or in the interstices of the eruption, and producing the appearance which has been termed by some the *swine pox*, and which, in treating of the diseases of the skin, I have been in the use of pointing out to my pupils as marks by which, in doubtful cases of small-pox or chicken-pox, they might determine the true nature of the disease. I mention this circumstance, with a view to show the reluctance and difficulty which I have had in adopting the conclusions that have forced themselves upon my mind, and which I shall now briefly state to you.

1st. I have been convinced, by the varieties which have appeared in the form of this epidemic in the different individuals whom it has attacked, that the descriptions which have been given of the appearances and progress of the eruption in small-pox by our best systematic authors, are, in many respects, imperfect; that the diagnostic marks which have been pointed out between small-pox and the disease that has been termed chicken-pox, are not to be relied upon; and that no applicable marks of distinction between modified small-pox and chicken-pox have hitherto been established. My observation would lead me to believe, that the eruption which succeeds to cow-pock, has more of a vesicular or varicelloid appearance in infants, than it has in adults, while, in these again, it shows a disposition to become pustular, and exhibits more of the characters of small-pox.

2dly. It appears from the records of medicine, that the same person may have small pox twice, (if not oftener,) during life; and the number of cases of this which have lately occurred in so short a time in Edinburgh, and in so limited a number of patients, seems to me to warrant the conclusion, that this must have been a much more common event than has usually been imagined. It is an event which, I conceive, must have occurred frequently, though its occurrence is denied by some, and comparatively but few instances of it are recorded, even by those who believed in its possibility.

3dly. It has been, I conceive, incontrovertibly established by Dr. Jenner and his followers, that cow-pock has the property of rendering those who have passed through it, much less susceptible

of small-pox infection than they were before ; and, besides this, that it possesses also the invaluable property of modifying the small-pox in those who receive them, and of converting them, from the most fatal of all diseases, to one scarcely, if at all, fatal. A sufficient number of observations have not yet been collected to prove satisfactorily, that this last property is possessed in an equal degree by the small-pox, though it seems probable from some, but not all of those cases of secondary small-pox which have been recorded, as well as from the result of some of the cases of this kind which have occurred in Edinburgh, that small-pox also possesses a similar property.

4thly. By admitting that small-pox possesses this modifying property, it will follow, that, in the instances in which they exerted this influence previously to the discovery of cow-pock, they must have produced a mild and less fatal species of small-pox, but a species which has not been recognized or pointed out as differing from primary natural small-pox by any author with whose writings I am acquainted. It seems, therefore, probable, that this secondary small-pox, which we have now so much reason to believe was of frequent occurrence, must have formed a considerable portion of the varioloid eruptions that were formerly denominated the spurious small-pox, and afterwards by some the chicken-pox. On the supposition that cow-pock preserves from the infection of small-pox in an equal degree with small-pox themselves (and I am not aware of any facts which tend to prove the contrary,) it will follow that the twenty-seven individuals whom I have mentioned as having had the varioloid disease after cow-pock, would, if they had had small-pox instead of cow-pock, have become affected with small-pox a second time, on being exposed to the contagion of this disease, and that too in a form which, previously to the discovery of the cow-pock, must have appeared to practitioners as spurious small-pox or chicken-pox. In this case it is evident that thirty-five of sixty-four of the patients who took the varioloid disease in the natural way, would have passed twice through small-pox.

5thly. After Dr. Heberden had distinguished chicken-pox from small-pox, and had convinced himself and the medical world, that these diseases arise from two contagious poisons, specifically distinct from each other, it seems probable, that the cases of modifi-

ed secondary small-pox which may have occurred, must have been described as cases of chicken-pox, since we nowhere find any hint of the possible co-existence of these two diseases, or of the danger in which medical practitioners are of confounding them together, and also, since we find authors of so great authority as Dr. Monro *Primus*, and Dr. Heberden, affirming that small-pox after small-pox is an event of rare occurrence. The former says, "My correspondents almost all agree with me in affirming, that they never saw any attacked by true small-pox after they had the true kind, whether communicated by art or by nature;" and the latter, "It would be no extravagant assertion to say, that here, in England, not above one in ten thousand patients is pretended to have had it twice, and wherever it is pretended, it will always be as likely that the persons about the patient were mistaken, and supposed that to be the small-pox, which was an eruption of a different nature, as that there was such an extraordinary exception to what we are sure is so general a law."

It therefore appears to me, 6thly, That it now remains to be investigated, in what proportion of the cases, which have been denominated chicken-pox, it is probable the disease has been secondary modified small-pox; and, upon the supposition of these being two distinct diseases, by what marks we are in future to distinguish them from each other. I can only repeat, that, in a great proportion of the cases of small-pox which have occurred to my observation after small-pox, as well as in those cases that had been modified by previous cow-pock inoculation, I have not been able to distinguish them from chicken-pox, but have found every symptom in them to correspond most accurately with the descriptions of the varieties of chicken-pox, which have been given by Heberden, Willan, Bateman, and others. I am, therefore, satisfied, that previously to the discovery of the cow-pock, secondary small-pox being a disease frequent in its occurrence, must have stood in nearly the same relation to primary small-pox, that modified small-pox now stand in to cow-pock; and my present impression is, that it may be, that chicken-pox and modified small-pox are one and the same disease.

I am not aware of any accurate or extensive series of observations which contradict this hypothesis, nor do I think it can well be set aside, till it shall be proved that chicken-pox occur general-

ly in persons who have not passed through cow-pock or small-pox, and prevail epidemically without cases of small-pox appearing among them; but of this I find no unequivocal example in the past records of medicine. There are upon record, it is true, many cases in which the spurious or chicken-pox are said to have preceded small-pox, and others in which the chicken-pox are said to have intervened between the cow-pock and the modified small-pox. Before, however, admitting that in the production of these cases, there operated two poisons specifically different, it will be necessary to be assured, that the appearances exhibited by chicken-pox cannot be produced by the contagion of primary small-pox, and *vice versa*, as well as, that the contagion of small-pox cannot produce an eruptive disease twice in those who have undergone cow-pock inoculation.

It will be necessary also to ascertain, whether those who have passed through small-pox in its milder form, are equally secure against a second attack of small-pox, as those who have passed through the disease in its more regular and severe form. For if it shall be found that those who have passed through the mild sorts of small-pox are less secure against a second attack, than those who have passed through the severe, it will then be rendered probable, that many of the cases which have been considered as cases of chicken-pox, preceding small-pox, were in fact only cases of mild small-pox, similar to some of those which have been produced by the present epidemic, in individuals who had neither passed through cow-pock nor small-pox, and which exhibited in their appearance the characters that Dr. Heberden has assigned to chicken-pox.

Can it be that the hypothesis of the contagion of chicken-pox being specifically different from that of small-pox, has been had recourse to, in order to explain those cases of secondary small-pox which may have occurred after variolous inoculation, and in the benevolent wish of vindicating that practice from the aspersion of its being inefficacious?

7thly. It seems to me certain, that the epidemical disease which has of late prevailed in Edinburgh, is the same with those varioloid diseases which, since the introduction of cow-pock inoculation, have been observed in many places of this and other countries, and which have been by some medical practitioners regarded

as small-pox, and by others as chicken-pox. Of this kind, I conceive, was the disease which Mr Brown of Musselburgh has described, as occurring in forty-eight individuals after cow-pock inoculation. This author has omitted to mention the period at which the eruption was at the height in ten of his patients, but in the remaining thirty eight, it deserves to be remarked, that the eruption was in five of them at the height by the 3d day; in two by the 4th; in twelve by the 5th; in seven by the 6th; in nine by the 7th; and in three by the 8th day; and that no instance is recorded of death having occurred in any of these patients. Though Mr Brown's statement was made for the purpose of throwing discredit upon the efficacy of cow pock inoculation, the salutary powers of that practice in modifying small-pox, seem to me to be established by his cases, beyond all possibility of doubt or cavil. I can have no doubt also, that this is the disease, concerning which the medical practitioners of Forfarshire published a short Report in 1813, and of which Dr. Adams has given a more minute detail in his Inaugural Thesis, printed here in 1814. This gentleman mentions, in p. 42, that this disease, which the medical men of Forfarshire have concurred in denominating small-pox, had occurred in five or six individuals, who had formerly passed through that disease. The efficacy of the cow-pock in modifying the small pox, is proved by the testimony of the medical practitioners, as to the mildness of the disease in those who had been vaccinated; and also by the fact, that no patient who appeared to have been properly vaccinated, died of it. The very interesting account given by Dr. Dewar, of the eruptive disease which has appeared lately in Fife, contains many proofs, that the disease which he describes is the same with that which at present exists in Edinburgh. Of seventy cases attacked with this eruption, fifty four had been vaccinated, and of these, one child who had been long in bad health, died. Of sixteen who had not been vaccinated, four died, a proportion wonderfully near, though somewhat less than that of the mortality which has occurred in Edinburgh.

Lastly. It seems to me, that the hypothesis which I have thrown out, if it shall be confirmed by future experience, will afford a satisfactory explanation of the nature of those varioloid diseases which have of late years been observed to succeed to the practice of cow-pock inoculation, and will, at the same time, reconcile the

various and discordant opinions which have been entertained by medical practitioners, respecting these diseases.

I shall only add, that I feel no anxiety about the fate of this hypothesis, any farther than that it may tend to promote investigation, in the important subject to which it relates, and to defend the most valuable of all modern discoveries, in the only point in which it can now be supposed to be vulnerable.

A friend, in whose judgment and experience I place the greatest confidence, has been pleased to express himself to me in the following terms : " The opinion suggested by you, that these diseases may all owe their origin to one and the same contagion, if true, would close up much debateable ground—connect and explain many anomalies—simplify our future inquiries—and place beyond any doubt the supremacy of vaccination, as a prophylactic of regular small-pox. Although the opinion suggested does still appear to me very doubtful, I think you will do quite right to publish your observations at once, and in the way you proposed. This will re-agitate a most important pathological question, and elicit from others, interesting information on many yet doubtful points in the history of those diseases. Though doubtful, however, I am far from thinking your opinion fanciful or unfounded ; on the contrary, I could furnish some hints rather favorable to its probability."

Before concluding these observations, permit me to avail myself of this opportunity, to return my best thanks to my friends, Drs. MacLagan, Moncrieff, Tweedie, and Bartlett, and to Messrs. Johnson, Shetky, White, and Thompson, for the opportunities which they have afforded me of seeing the patients affected with this disease under their care ; and permit me at the same time to say, that I should feel myself particularly obliged to any of your readers who take an interest in this subject, by their communicating, through the medium of your Journal, or by letter, addressed directly to myself, any facts which may have occurred in their practice, tending either to confirm or to refute the hypothesis, *that small-pox, chicken-pox, and modified small-pox, all proceed from one and the same contagion.* I remain, dear Sir, yours, &c.

5, George Street, }
15th September, 1818. }

VOL. II.

JOHN THOMSON, M. D.

Additional Observations on Varioloid Diseases. By JOHN THOMPSON, M. D. &c. &c.

DEAR SIR,—Since sending you the “Observations on the Varioloid Diseases, &c.” I have had occasion to see twelve additional cases of it in Edinburgh. In two of these the disease has occurred in persons who had previously passed through small-pox. It has attacked, for the second time, a boy who had been inoculated with cow-pock; and it has proved fatal in two instances in which the patients had not passed through small-pox or cow-pock inoculation.

Having been informed by my friend Mr. William Wood that a varioloid disease similar to that which had occurred in Edinburgh was prevailing in the town of Lanark, and at Mr Owen’s cotton mills in that neighbourhood, I visited that place, and found that the disease had prevailed very extensively in the town, but was then beginning to decline. Five instances were mentioned to me by the medical practitioners in which it had proved fatal, but I could not hear of any deaths having taken place among those who had previously undergone vaccination.

At Mr Owen’s mills, through the obliging attention of Mr Gibson, who has the medical charge there, I had an opportunity of seeing 118 cases of young persons affected with this epidemic. In its general appearances the disease bore a very striking resemblance to that which I have had occasion to see in Edinburgh, though on the whole it appeared to me to have a character considerably milder. Four only of those affected with it had previously passed through small-pox; in two of these the disease was mild, but in the other two severe. Eighty two had this disease after having passed through the cow-pock. In a few of these it might be said to be severe, but in by far the greater number it was extremely mild, and exhibited the most convincing and agreeable proofs of the efficacy of cow-pock in modifying small-pox. Thirty-two had the disease without having passed through either cow-pock or small-pox, and what appeared to me remarkable, it had proved fatal only in one person of this class. Several, however, had been in imminent danger, and their recoveries may be tedious. Five or six in this class, as well as a considerable number of those who

had previously passed through cow-pock, had the disease in a form so slight, as to agree with the descriptions which have been given of chicken-pox rather than small-pox. Several individuals had experienced a severe variolous fever without any eruption having appeared, while others had the eruption with little or no fever. The eruption itself varied in quantity from one pustule to a number that was in some instances unaccountable. By a letter which I received last evening from Mr. Gibson, I learn that the disease is still on the increase. One more instance has occurred of its having attacked a boy who had previously passed through small-pox, and one where it has attacked for the second time a lad who had previously passed through the cow-pock. In some of those who have neither undergone cow-pock, nor small-pox, the disease continues, Mr. Gibson informs me, to exhibit the symptoms which have been regarded as characteristic of chicken-pox. But I forbear entering more minutely into details, as I am not without hopes that that gentleman may himself be induced to lay before the public an account of this epidemic as it has presented itself to his observation.

I have been led to believe, that it might be useful to circulate among medical practitioners, the following queries; definite answers to which could not fail, I conceive, to remove much of that disagreeable uncertainty which exists at present, with regard to the several points to which these queries relate. They have not, as to some on a first perusal might appear, been hastily drawn up, but are, as well as the conclusions contained in my former letter to you, on which they are founded, the result of much observation, reading, and reflection. I have only to repeat, that I shall be obliged to such of your readers as have had occasion to attend in a particular manner to varioloid diseases, by their communicating to me, through the medium of your valuable Journal, or otherwise, any information which may tend to throw light on the different subjects of these queries. I may remark, that, in tracing the history of chicken-pox, it is particularly desirable that it should be accurately ascertained in what situations and seasons it has appeared only as a sporadic, and in what as an epidemical disorder.

Query 1st. Have you ever had occasion to see Chicken-pox prevailing epidemically, without cases of Small-pox occurring among them?

2d. Have Chicken-pox appeared to you to attack those who have not had either Small-pox or Cow-pock as frequently as those who had passed through these diseases; and have you remarked any difference in the appearance of the eruption in these three several classes of patients?

3d. Have any examples occurred in your neighbourhood of persons having had the Small-pox twice? and did it appear, in those instances, that the disease was less severe in its second than in its first attack?

4th. Has a Varioloid disease occurred to your observations in persons who had passed through regular Cow-pock Inoculation; and in the instances in which it may have occurred, whether has this disease appeared to you to resemble more Chicken-pox or Small-pox?

5th. Has this Varioloid disease, when it has attacked those who had been vaccinated, proved in any instance fatal?

6th. What were the usual symptoms of this disease in those who had not passed through Small-pox or Cow-pock? Were they those of Small-pox, or of the disease which has been termed Chicken-pox?

7th. In what proportion of persons attacked with this disease who had not been vaccinated or variolated, has it proved fatal?

8th. Have you had occasion to see any instances of modified Small-pox, or the disease which has been termed the Chicken-pox, occurring oftener than once in the same individual?

9th. Does the general description which I have given of the Varioloid disease, in the three different classes of persons whom it has attacked in Edinburgh, agree with that of your observation; or in what respect does your observation differ from mine?

10th. Are you acquainted with any facts which tend to disprove the hypothesis that Small-pox, Chicken-pox, and Modified Small-pox, may all arise from one and the same contagion?

I remain, Dear Sir, yours truly,
JOHN THOMSON, M. D.

5, George Street, 15th October, 1818.

P. S.—Since sending you the above letter, I have received among several valuable communications on the subject of Varioloid Diseases, one from Dr. Mudie of St. Andrews, containing a particular account of an eruptive disease which prevailed at that place in the end of the year 1817, and beginning of 1818, resembling, in every respect, that which has lately occurred in Edinburgh; and accompanied by a document proving incontestably, that the idea of variola and varicella, arising from the same contagion, had been forced upon Dr. Mudie by observation, and dis-

tinctly expressed by him in a letter to Dr. Macfarlane of Perth, dated 15th April, 1818.

J. T.

5, George Street, 17th October, 1818.

The following letter accompanied the foregoing paper.

5, George street, Edinburgh, Sept. 21st, 1818.

SIR,

I HAVE taken the liberty to send you a small publication relative to a Varioloid disease which has lately prevailed in Edinburgh. As there is reason to believe that this disease must have occurred in other places, I am desirous, in collecting information respecting it, to avail myself of your experience; and I should therefore feel particularly obliged by your communicating to me any observations which you may have had occasion to make, or which you may be able to procure from other Medical Gentlemen in your neighbourhood, respecting Varioloid diseases, resembling that of which I have given a brief account in the paper accompanying this letter.

The following queries contain some of the leading points to which I would beg leave more particularly to direct your attention:

1st. Have you ever had occasion to see Chicken-pox prevailing epidemically, without cases of small-pox occurring among them?

2d. Have Chicken-pox appeared to you to attack those who have not had either Small-pox or Cow-pock as frequently as those who had passed through these diseases; and have you remarked any difference in the appearance of the eruption in these three several classes of patients?

3d. Have any examples occurred in your neighbourhood of persons having had the Small-pox twice? and did it appear in those instances, that the disease was less severe in its second than in its first attack?

4th. Has a Varioloid disease occurred to your observation in persons who had passed through regular Cow-pock Inoculation; and in the instances in which it may have occurred, whether has this disease appeared to you to resemble more Chicken-pox or Small-pox?

5th. Has this Varioloid disease, when it has attacked those who had been vaccinated, proved in any instance fatal?

6th. What were the usual symptoms of this disease in those who had not passed through Small-pox or Cow-pock? Were they those of Small-pox, or of the disease which has been termed Chicken-pox?

7th. In what proportion of persons attacked with this disease who had not been vaccinated or variolated, has it proved fatal?

8th. Have you had occasion to see any instances of modified Small-pox, or the disease which has been termed the Chicken-pox, occurring oftener than once in the same individual?

9th. Does the general description which I have given of the Varioloid disease, in the three different classes of persons whom it has attacked in Edinburgh, agree with that of your observation; or in what respect does your observation differ from mine?

10th. Are you acquainted with any facts which tend to disprove the hypothesis that Small-pox, Chicken-pox, and Modified Small-pox, may all arise from one and the same contagion?

I am, Sir,

Your most obedient humble servant,

JOHN THOMSON, M. D.

History of a Case of Cœsarean Operation, in which the Lives of the Mother and Child were both preserved. By J. J. LOCHER, M. D. Town Physician of Zurich. Communicated by J. ALBERS, M. D. of Bremen. With a few preliminary Observations by the latter.

[Medico-Chirurgical Transactions, Volume IX.-Part I.]

IT is a most remarkable circumstance, that in a country like Great Britain, where beyond all doubt the boldest operations of every description have been performed with success, the Cœsarean operation should never have been attended with the same fortunate result as in other countries. It is but too true, that in that

country there has not hitherto been a single case in which the life of the mother has been saved by this operation. Such was the information I received from Dr. Haighton, during my stay in London in 1798, and the same fact was repeated to me lately by Professor Lawrence in one of his last letters, when I had given him an account of this case and of another to be mentioned hereafter. When, therefore, I learned that in the beginning of this year the Cæsarean operation had been performed by Dr. Locher, the universally celebrated accoucheur at Zurich, with such success, that the lives of both the mother and child were saved; I requested him to favour me with the communication of the case, that I might lay it before this Society, to which he politely consented. Although the truth of his relation does not in any shape admit of a doubt, and the revered name of Locher is sufficient security, yet the original statement of the operation, which was forwarded to me, is not only attested by the signature of the archiater, Dr. Rahm, but also by the seal of Mr. Hottinger, the magistrate and the third town-secretary; which original document, together with a letter directed to me for the purpose, I have the honour to send to the Society herewith.

A second case of the Cæsarean operation was, on the 16th of May of this year, performed at Minden by my friend there, Dr. Nicholas Meyer, in which the mother's life was saved, but the child bore every indication of having died before the delivery. In No. 66. Vol. III. of the Salzburg Medico-Chirurgical Journal of this year, this case has been briefly described, and in corroboration of the truth, I also add to it a juridical and sealed certificate.

J. A. Alberts, M. D.

On the 16th of February, 1817, at three o'clock in the morning, I was summoned to a woman of this town in labour; she was said to be incapable of bringing forth her child.

On my arrival I found a little woman out of bed, who in her early youth had been ricketty in a very high degree, and had attained the age of eight years before she could stand without assistance, and still less could walk. The head and upper part of the

body were well formed ; but from the os ilii downward, the frame was entirely crooked, and particularly the leg and thigh quite twisted.

She had pains at this time ; but, upon examination, the orifice of the uterus was discovered still to be situated very high, and to be but little opened. Behind it there was a hard body, which I took for the head ; at a very great distance indeed, scarcely attainable with the finger. As for the rest, the woman had laboured before under spasms, and the present pains appeared spasmodical fits, rather than true labour pains. I prescribed for the patient anodyne remedies and steam-baths, and recommended her to go to bed, and as the weather proved rather cold, to keep herself warm. When after a second examination, I observed no change in the orifice of the uterus, nor any increase of pains, I left the person about six in the morning, and enjoined the midwife present, to observe her attentively, and inform me of every alteration. She made use of the prescribed medicines regularly, and towards ten o'clock I paid her a second visit.

She was in a heated state, owing (as she told me) to the continual pains ; the waters had not yet flowed off ; upon examination, the orifice was found a little more opened, so that behind it, though in an oblique position and extremely high, I could distinctly feel the head of the child. During the pains, which the woman experienced with great vehemence, not the least protrusion forwards of the foremost parts of the head was felt ; and in that very height, it already appeared to be wedged in. Some examinations performed successively during the pains, convinced me of the existence of a pelvis quite irregular and crippled by rachitis.

The aperture of the uterus being yet so small, that the application of the forceps or other assistance could not be thought of, I left the patient towards twelve o'clock, with the same directions as I had given in the morning, and the information that I should again visit her at three o'clock, in hopes that during the interval the uterus would open sufficiently to admit the forceps or some other assistance.

Convinced that if even the forceps could be applied, a very difficult labour awaited me, which would in a very high degree exhaust my strength, I requested one of my colleagues, Dr. Spoend-

ly, to attend and support me in this labour. On our arrival after two o'clock in the afternoon, I made an examination during a pain, and found the orifice of the uterus much more dilated than I had found it three hours before, and behind it a small pointed bladder, which in the pain showed only little tension. Every thing hitherto exhibited by the examination, the inefficiency of the pains both on the chair and bed, the bursting of the bladder during such a pain (on which occasion indeed only a couple of spoonfulls of water escaped, and the head immediately was stopped) determined me; the orifice of the uterus being sufficiently opened, to apply the forceps, notwithstanding I beforehand questioned the possibility of executing my purpose; as after all my examinations, the pelvis in its conjugata measured not above two, or at most two and a half inches in diameter, and the remaining dimensions were in the same proportion. I now attempted to introduce the male lever of my forceps, bent to the axis of the pelvis, on Stein's and Brüninghausen's principles and my own, and, after conquering great obstacles, I succeeded, though in a direction quite oblique. This position of the lever of the forceps already proved how difficult would be the introduction of the second. However, as under circumstances perhaps still more unfavourable, I had succeeded in attempts of this nature, I tried to introduce also the second, but all my efforts proved unsuccessful. The confined entrance into the pelvis did not permit the second lever to slide over the first.

After repeated fruitless attempts, my assistant likewise tried the operation but with the same result. The pains which the woman suffered were extremely vehement and excruciating. Meanwhile the antispasmodic remedies were continued, and the patient kept in bed as quiet as possible.

Under these circumstances, and the absolute impossibility of applying the forceps, our consultation turned on two indications, viz. *perforation* and *the cutting of the child*, particularly as its head presented itself; or secondly, *the Cœsarean operation*.

There was against the former indication the very probable impossibility of introducing the instruments requisite for the perforation, the unavoidable lesion of the parts adjacent, if the introduction were found practicable; and particularly the assertion of the mother, that still she felt the motion and quickness of the child, which likewise was distinctly perceptible to our hands, when laid

on the mother's body. We therefore determined on the second, under the conviction that by it the life of *one* at least might be saved.

The nearest relations who were present were apprized of the determination, and, with their approbation, the woman in labour was likewise informed of it. After a few objections, she also soon came to a determination, and we prepared our apparatus and every thing that was necessary. After the injection of a clyster there followed stools and urine.

At five o'clock in the evening the operation was performed in the presence of several professional gentlemen, and in the manner following. I caused the patient to be placed in the position usual in herniotomy, in which the weight of the abdomen presses more against the diaphragm, and ordered her to be properly secured.

Having performed before a similar operation, I was induced to make the incision immediately upon the linea alba, as not a single blood-vessel of any importance had been injured on that occasion. Immediately beneath the navel the skin was pinched up into a fold, both it and the adipous membrane cut through, and the cut continued downwards to the length of from eight to ten inches. The sphere of the uterus, now appearing, extended the fat edges of the incision, so that there appeared a considerable vaulted surface of the womb. There protruded also a portion of small intestine, which, however, was easily kept back by means of linen anointed with fat. In order not to cut through the uterus exactly in a place where the placenta might accidentally be situated, and thus excite a violent bleeding, I chose a somewhat uneven part of its surface, and there made a little incision, so that I could introduce the index of the left-hand, to serve as a guide for the progress of the knife. The uterus was then cut open from six to eight inches along the finger. Immediately the child presented itself, together with its membranes, yet without any water. The haemorrhage till then was a mere nothing. The nearest part of the child was an arm. This, as there was room enough, was disengaged first from the uterus, and after it carefully one part of the child after the other in succession, and last of all the head. Already, before the head was freed from the womb, the infant moved its limbs, and on the development of the head, to the greatest joy of the mother and all the attendants, it proved its life by loud cries so

that not the least thing was required to remove the asphyxia of the infant. The funiculus umbilicalis was severed, and the child entrusted to the waiting woman to be cleansed. In the right side of the womb was found the placenta, which, lying almost quite free, was now taken away. At this period a violent bleeding arose from the bottom of the uterus. The ligature of a blood-vessel, or any other styptical application was not to be thought of under these circumstances; but the blood was quickly absorbed from the uterus by means of a sponge, in order to leave the organ to its own contraction, and to close the wound of the integuments. To this I was the more induced, as a couple of years previously, on dissection, I had found in a person, who died eight days after the operation, the uterus quite contracted, and the labia of the wound in the same almost entirely united. I therefore joined the external teguments with five sutures, covered the wound with lint, and applied some adhesive plasters, confining the whole with a couple of compresses and a broad bandage.

The mother was now transferred to her bed. Neither fainting nor any other accident befel her. On the contrary, her joy and eagerness at seeing her child, and having it by her were so powerful, that even while dressing the wounds we had much trouble to keep her easy. She now was presented with some good broth which she ate with great appetite, and the greatest tranquility was enjoined her. An emulsion with laud. liquid. Syd. and Tinct. Cinnam. Was then prescribed for her.

At ten o'clock in the evening I again paid the patient a visit. She found herself quite tranquil, and complained of nothing but a burning in the wound. During the night, she enjoyed at intervals quiet sleep, which had often been interrupted by the cries of the child, for which reason it was removed to another room. The blood began to flow from the vagina. The urine passed in the natural way. In the morning she took her coffee. The belly appeared considerably protuberant and tense, but not very painful to the touch. The superior part of the dressing, which was soaked with a serous fluid, was removed, and a new one very loosely applied; the internal remedies were continued, externally a friction of ol. anod. with hyoscyamus and laudanum applied, and emollient clysters administered. The second day passed well, and without any material complaints, and also the third. The lochia flowed in due

order, the belly grew softer ; yet in spite of repeated clysters no stool ensued. The tongue became foul, for which reason, besides the former emulsion, a decoction of tamarinds with salts and manna was given. On account of the exuberant evacuation of serum and the appearance of suppuration with smell, the external dressing was daily renewed ; as for the rest, the real dressing was kept on. In the night between the third and fourth day, abundance of flatulencies were developed, followed towards the morning by a stool. The belly was soft, the patient upon the whole well, quiet, and without fever. On the right side of the belly appeared the greatest tension, and the greatest pain was felt. Every thing was continued as before.

On the fourth in the morning, she found herself very well. From the very moment of the operation till now, partly for the sake of observation, partly in case of any immediate help being requisite, one of my assistants had remained with her. Towards noon I was sent for and requested to repair as quickly as possible to the patient, who was apparently dying. The better I had left the patient in the morning, the more unexpected and strange was this message to me.

On my arrival I indeed found the patient in a very indifferent situation. She experienced violent convulsive spasms, particularly in her head. She had a staring look, cold extremities, cold sweat on her brow : the urine had been discharged involuntarily. She recollects nobody, could neither speak nor swallow ; her breath was much oppressed, the pulse low and contracted ; her complexion saturnine : yet the abdomen was not much collapsed, which must have been the case had gangrene existed. None of the persons present were aware of the cause that in such a promising prognosis had occasioned a change so sudden and so distressing to the physician. She had still taken some soup, and then said, she felt very squeamish. Under these circumstances, and the patient not being able to swallow, I had no means left but to make her smell volatile essences and apply antispasmodic frictions, especially about the neck, to remove the convulsions and spasms, and restore the faculty of swallowing. This was effected after the space of a couple of hours, when an analeptic mixture was given to her every hour, and every two hours some musk. Clysters and external frictions, especially round the neck, were

continued. Towards evening, the evil, rather than increase, seemed to abate. Her speech returned, her warmth became equal, the skin moist, the pulse softer. Her weakness was very great. Being almost fully convinced that too great exertion in speaking and too great joy, in short, that passions had brought on this alteration, I prohibited all visits, and left the patient without any other company but two persons to watch her. The night was passed with varying symptoms, yet more tranquilly, and without fever or other accidents. The cathartics took effect, recollection returned, the belly became rather more distended and painful. On my visit in the morning of the fifth day, she called out to me, "I have suffered severely; but at present I find myself very well." Most of the symptoms, indeed, had ceased, so that the highest state of quietude was once more to be recommended. The belly was soft; on the application of cathartics there followed evacuations; the natural complexion and warmth returned; she felt much ease and comfort from changing beds. As there appeared a violent suppuration or rather a copious oozing of a strong-smelling serum, the dressing, all but the ligatures, was taken off, and put on again loosely in the same manner. The ligatures all were in the best order and duly kept the labia of the wounds together. The interior treatment was not at all changed. From this time the patient daily improved; every day the external dressing was renewed. The belly collapsed visibly; the uterus contracted more and more; the lochia were discharged as they ought; the milk appeared in the breasts, though but in a small quantity, so that this concern was entirely left to nature.

On the tenth day after the operation the ligatures began to form small pustules and thence give way. Two of them, which were the least tied, were removed, and the three remaining ones were left to hold as well as they could. The internal remedies were still continued, and especially the cathartics. Four or five days later, the three other ligatures were likewise taken off, and the wound treated as a simple sore, and kept together and supported by adhesive plasters only. Good fare, wine, &c. aided her strength.

The same treatment was continued till the 20th of March; no disastrous accident occurred. All the functions of the body went on in the best order. The wound was cleaned and healed consi-

derably from day to day. The patient remained without all medicines till the 27th, when on account of the uncleanliness of the primæ viæ, some purging medicine was thought proper for a couple of days. The patient now daily spent a few hours out of bed, began to work, mind her child, and in short, except from the sore which was not very large, suffered not the least inconvenience. In the seventh week after the operation, the menses reappeared, though somewhat irregularly; since that they have occurred at due periods. From day to day her strength improved, so that in the eighth week she transacted most of her domestic concerns, and never more was confined to her bed during the day. In the twelfth week she paid me a visit in the best health, at my house, together with her admirably handsome and stout babe.

It appears surprising, that in the middle of this wound a little spot, not exceeding two or three lines in length and breadth, in spite of all the remedies applied for the purpose, will not close; and when thought to be healed up will again open, yet without any detriment to the mother. The child, now eight months old, may likewise be exhibited as a pattern of health, strength, and beauty.

J. J. LOCHER, M. D.
Town-physician.

Zurich, October 20th, 1817.

In compliance with the wish of my honoured friend the very skilful *accoucheur*, Dr. Locher, I corroborate the truth of this remarkable observation by my signature.

DR. and ARCHIATER RAHN.

Zurich, October 20th, 1817.

The identity of the above signatures, which were affixed in the Senate House, is attested, Zurich, the 21st of October, 1817, by the third State Secretary of the Canton of Zurich.

(L S)
Secreti Civium Turicensium.

HOTTINGER.

On Febrile Origin. By Dr. KINGLAKE.

(From the London Medical and Physical Journal.)

THE origin of febrile disease is unquestionably very various, and is often so obscured by incidental and collateral circumstances, as to render a correct discrimination of its source extremely difficult. But a well-founded distinction may be justly made, as to whether the disease has a local or general commencement. The universality of febrile action is such as to render it inconceivable that such an extent and violence of disease could have at once arisen, and have been manifested compatibly with the continuance of life. A disorder so general, and so sudden, would, it may be presumed, involve the vital functions of the animal economy in such a state of embarrassment as would necessarily, *ipso facto*, be destructive to existence. Deviations from the healthy state, of whatever nature or degree, are, for the most part, slow in their approach, and gradual in their progress. Seasonable and ample warning is given of the onset of diseases, by the disturbed sensations arising from the deranged actions and functions of the various parts of the system. The salutary actions of life are bound and linked together by the mutual ties of organic sympathies. The circumstance of one part being in a state of health is an efficient law in the animal economy for other parts to be in a similar condition ; and thus a reciprocity of vital and healthful influence subsists between both the contiguous and remote parts of the animal frame. But for this innate connexion, there would be neither entireness nor harmony in the various and dissimilar functions of animal life. The beneficence of Nature has happily provided, in the difference of structure of the animal frame, barriers or obstacles to the easy transmission of disordered action. It is not every slight departure from the healthy state that either establishes or propagates itself. The part that may be its seat re-acts on the morbid intrusion, and at least restrains its threatened mischief, if it should not overcome and annul it. The conflict on these occasions announces itself in such a way as to render the attack an object of seasonable attention. If the resisting or counteracting power in the diseased part should be unequal to its own defence,

and should give way to the morbid circumstances by which it might have been assailed, the system, more or less generally, and with greater or less violence, will partake of the commotion, until that which at first occupied, as it were, but a part, may be at length gradually extended over the whole frame. It is in this way, it may be presumed, that all febrile diseases, which are commonly regarded as of a general nature, originate, and finally become diffused over the system, agreeably to the natural laws of associative or sympathetic action.

It is obvious that febrile affections will, in their radical, as well as external, character, be considerably modified by the properties of the agents by which they may be induced. It is also equally evident that constitution, habit, climate, and other physical and moral circumstances, will exert their respective and peculiar influence in producing the description of fever that might exist. The external character of fever may be almost infinitely diversified by various causes; but the intrinsic nature of the febrile state admits of the important practical generalization, that all the forms of that disease are of a local origin, and are never, in their onset, commensurate with the whole system. The doctrine of fever is much simplified by this view of its fundamental nature, and cannot fail usefully to point out, as the leading object of inquiry, what particular part might have been the seat of the disease that has been sympathetically extended so far over the system as to assume the form of febrile affection.

The true nature of fever will be much elucidated by looking to its probable source and dissemination, instead of embarrassing the attention with unmeaning calculation as to occult influences, and supinely watching the course of the general conflict, without efficiently relieving the local disturbance from which the extended mischief had originated. The importance of the distinction here insisted on refers rather to low remittent fevers, usually considered as of the typhoid kind, in which the attendant symptoms do not directly suggest the existence of visceral disease; or, at least, not in a degree sufficient to have given birth to the affection. Instead of a vital organ being suspected to be the source of such diseases, when any particular viscous is especially affected, it is held to have been incidental and secondary, rather than essential and original. When the commencement and progress of visceral

disease are such as denote active inflammation, no doubt remains on the subject, and the treatment is solely directed to remedy the local ailment. The arbitrary distinction which has been raised between inflammatory and febrile diseases has been productive of much mischief: they probably never differ but in the *majus* and *minus*; they are radically the same, and to dispute the identity of principle from whence their different forms proceed, would be to multiply words without distinguishing things. It does not at all follow; that, because a vital organ is not agitated with the more violent pains of inflammatory action, that it should not still be disordered by a state of excitement that may be subversive of its healthy function, from whence may arise morbid sympathies, that may be distributed over the whole frame. The symptoms of this state may not be evidently inflammatory, but the suffering viscus has nevertheless to cope with congestive fullness and painful action of vessel, that constitute a very serious state of disease, and will require, for its relief and cure, a watchful attention to its local nature, rather than an unavailing endeavour to alleviate the symptoms, without such due reference to the morbid source from whence they proceed.

Agreeably to the view which has here been taken of the febrile state of disease, it is clear that it is a morbid condition that implies a general affection of the system, resulting from some local derangement of the healthy condition of some part of the frame. The state of fever, therefore, although of a secondary nature, implies a condition of disease always serious from the magnitude of its extent, and as possessing a degree of danger proportioned to the vital importance of the part from which it derives its origin. The brain is the grand source of sensation; its healthful state cannot be disordered without, in some measure, distempering the sensibility, and associatively disturbing the various functions of the whole frame. It is not uncommon for the brain to be oppressed by vascular fullness, in a degree not only to disorder its healthy sensation, but also to draw into sympathy with it the heart, stomach, intestines, lungs, liver, kidneys, and other parts, inducing the full form and character of febrile disease. This affection may run on to an indefinite period,—at least, until either destructive exhaustion, disorganization, effusion, or extravasation, ensue; or the re-active powers of the system may ultimately re-

store the healthy state of the brain, when the sympathetic part of the malady would subside, and terminate in health.

The sensitive nature of the brain, and the various and complicated functions which it has to perform in the animal economy, render it peculiarly susceptible of becoming affected by slight causes of disease. Occurrences that would be harmless in any other viscus, might be seriously injurious to the brain. The affection may not, indeed, be inflammatory: the morbid excitement may not go to that extent; yet it deranges the healthy function, and thereby disturbs the whole system sufficiently to induce the ordinary appearance of febrile disease. The leading inquiry in all febrile diseases should be, to ascertain what vital organ is most affected; and the history of the case should be sufficiently investigated, to determine whether the suffering organ was primarily or secondarily affected. The danger of fever is generally to be estimated by the importance of the vital organ that may have originated it. When it occurs on the brain, the hazard is most formidable; the heart and stomach are also organs of fearful disease. The lungs, liver, kidneys, &c. are attended with proportionate risk and uncertainty. If fevers of every kind are radically similar in being of local origin, it is clear that the indication of cure will partake of that radical resemblance. From the excessive tone and action emanating from inflammatory excitement, and occurring in either the visceral, muscular, membranous, ligamentous, or any other kind of structure, down to the less developed conditions of morbid action, presenting in the low remittent kind of fever, it becomes equally necessary that the burthen of disease should be removed from the affected part, seeing that on its cessation depends the subsiding of the general affection.

Vascular depletion, and intestinal evacuation, to an extent that would be likely to disembarass the affected parts, will be required; and, although a tardy convalescence may be expedited by tonic and stimulant treatment, yet, pending febrile affection, it is probable that the local cause of the general ailment still exists, and that, until it be effectually relieved, the feverish state will not be overcome. As long as the local origin of the disease exists, its extension, of course, will remain; and, during that time, stimulating agents must add to the diseased action, and tend to incur either destructive exhaustion, or irretrievable disorganization.

The abstraction of morbid stimuli is the grand object to be pursued in the cure of all diseases dependent on either vitiated, inordinate, or excessive action. These morbid stimuli are commonly excessive arterial action, undue vascular distension, unequal distribution of the circulating fluids, irregular and distempered secretions, inactive bowels, thirst, deficient perspiration, intemperate heat, mental anxiety, &c. These should be either moderated or wholly withheld, according to the exigencies of the case, when the order and calmness of healthy action would, most likely be resumed and established. An increased action of the heart and arteries, with deranged secretion, denote an active source of disease, which must be overcome by means of abstraction, rather than of supply; or, to speak more medically, by sedative rather than by stimulant influence, before the healthful state can be restored. But, when the powers of life begin to flag, and the evidence of immoderate excitement is wanting, it will be requisite to sustain the drooping state of vital energy in such a way as may afford a chance of restoring it to the healthy equilibrium. Pure air, adequate warmth, aliment, sleep, and mental tranquility, are the most congenial and salutary stimulants on these occasions; and when the local ailment has not mortally injured the affected part, recovery may be calculated on as the natural and reasonable result of such agency.

Taunton, March 12, 1818.

On the Medical as well as Dietetic Properties of Common Salt.

By JOHN MARSHALL, Esq.

[From the London Medical and Physical Journal.]

THE following case may probably be considered as worthy insertion in your Journal, as it affords an interesting proof of the anthelmintic properties of *common salt*. The attention of the public has been lately attracted to the generally salubrious virtues of this substance by Sir Thomas Bernard, in his patriotic researches

into the Salt Duties. In his work,* he has introduced an interesting letter from my friend, Dr. Paris, of Dover-street, which is more immediately connected with the object of this communication, and which I conceive to be of such medical importance as to deserve particular notice in a professional work ; I must, therefore, beg to quote the passage.—“ No idea can be formed of the distress of the lower orders of people in the inland parts of Cornwall, for *want of salt*. They are obliged to eat their potatoes without any relish, unless they can beg from the neighbouring farmer a little pickle: it is the universal clamour, ‘ *if we could but have a little salt, we should be contented.*’ They appear to have a desire for salt, almost as strong as the fatal passion for ardent spirits ; and a degree of exhilaration and comfort is experienced after it, which it is difficult for those who have not witnessed it to conceive. Diseases of the *stomach* are the *prevalent* complaints of these poor people ; and I am induced to believe, from observations made during an extensive practice, that children become *infested with worms*, by a diet of fish that is not properly salted.”

On perusing Dr. Paris’s account of this prevalent cause of disease and sickness, Sir Thomas Bernard observes, that “ the mind naturally recurs to Lord Somerville’s account (in his Address to the Board of Agriculture) of the effects of a dreadful punishment which formerly existed in a neighbouring country :—‘ In Holland, the ancient laws ordained men to be kept on bread alone, *unmixed with salt*, as the *severest* punishment that could be inflicted in their moist climate. The effect was HORRIBLE : these wretched criminals are said to have been DEVoured BY WORMS, engendered in their own stomachs.’ ”

The following case, which occurred under my immediate notice and care, seems particularly worthy of attention on this occasion.

In the month of December last, I attended a lady who supposed herself attacked with symptoms of approaching apoplexy, or to use her own words, “ a fullness of blood—irregular circulation with such a determination to the vessels of the head that she feared it would

* See Case of the Salt Duties, with Proofs and Illustrations ; by Sir Thomas Bernard, Bart.—London : John Murray, Albemarle-street. 8vo. December, 1817.

deprive her of life, or, at least, produce a paralytic seizure." With these impressions, being a little whimsical in her notions, and replete with nervous apprehensions, she frequently sent for a cupper, who, by her own desire, was directed to abstract from the back of her neck, at each operation, sixteen ounces of blood, and this was repeated five or six times in the course of twelve months. Previous to my seeing her, she had occasionally consulted Sir Walter Farquhar, who always endeavoured to dissuade her from having recourse to cupping or any other sudden means of depletion. I was called to see her, in consequence of this impression being greatly increased by dizziness, attended with symptoms of indigestion, loss of appetite, a numbness of the right lower extremity, and a convulsive motion of the left eye-lids. She was strongly persuaded that cupping would be of the greatest service, to which I consented, and seven ounces only were obtained.— The blood appeared the next day very thin, and its texture less firm than natural, which sufficiently marked the frequent application of the scarificator; I felt, therefore, much satisfaction at not having doubled the quantity. But I must now proceed to what I consider the most interesting part of the history of this case. After a week's attendance, she mentioned a symptom which she deemed of a most unpleasant nature, viz. worms, with which she had been troubled all her life; and these were *ascarides*, constantly voided in greater or less quantities, with the usual irritation in the rectum, which was at times intolerable.— She had voided also *lumbrici*. Having just perused Dr. Paris's observations, in the work of Sir Thomas Bernard, I enquired whether she was in the habit of taking salt with her food; she replied, that she had an antipathy, from a child, to its use, &c. On entering minutely into a thorough investigation of her case, as regarded the total absence of salt, I found that even her cook was directed never to use salt on any account in her diet. About three years ago, she was attacked with a violent cough, that completely baffled the usual remedies, which were prescribed by a skilful hand on that occasion; nothing relieved the violent paroxysms of coughing, but *eating*; after dinner, which was late, the cough entirely ceased for some time, and the more solid and copious the meal, the longer was the interval of quiet. One day, however, at noon, she coughed so violently that it caused

her to vomit ; the efforts of retching were repeated three times, and each effort brought up several worms, which terrified her exceedingly, but from that moment the cough was relieved. I enquired, if she could recollect how long she had actually been troubled with worms ; to which she emphatically replied, " she had been troubled with them as long as she could remember, and from her earliest infancy, and had never been free from them, although she was now sixty-six years of age." She had, in obedience to my wishes, eaten a little salt with her meals, but she could not undertake to go on with it, because it was so highly nauseous to her taste, and she hoped that I would devise some other means of subduing the worms : salted meats were suggested, such as ham, tongue, hung-beef scraped, &c. ; and, it is curious to remark, that she had never eaten them in the course of her life, and she would rather endeavour to use salt with fresh meat than partake of them. Her complexion is pale ; the teeth, considering her age, are remarkably good in front. This lady is generally habituated to exercise, and is a great walker : frequently walks, for amusement, a distance of fifteen or even twenty miles.

On mentioning this case, and Dr. Paris's observations, to a reverend divine who resides at his deanery in Ireland, he favoured me with some additional remarks on this interesting subject.—A singular fact, well known in Ireland among those who have the superintendance of horses, is, that salt is considered the most effectual and certain remedy for *bots* in that animal. He also informed me, that the poorer orders, subject to worms, used a dose of common salt as a popular remedy. In that country, where the duties on this article are not so excessive, the mode of fattening hogs is by sprinkling a little salt upon every meal, by which means they are found to fatten in half the period they would otherwise require. In some parts of that kingdom, the inhabitants are fully aware of the advantages in mixing it with manure.

I will conclude this communication, by reminding your readers, that Rush states, that he has administered many pounds of common salt as an anthelmintic remedy ; the following is his formula :—R. Soda Muriatis, 7ij. Coccinellæ, 3ij. M. Fiat Pulvis, detur drachma dimidia, pro dosi, tempore matutino.

I might extend this paper by some observations upon the anti-septic properties of salt. Dr. Paris, in his evidence before a

committee of the House of Commons, upon the subject of the Salt Duties, has stated many interesting facts upon the subject; and in your Journal for December 1809, you have recorded some cases from the pen of that scientific physician, in illustration of the antifebrifuge effects of muriatic acid.

12, *Half-Moon-street, Piccadilly,*
April 8, 1818.

Experiments and Observations upon the State of the Air in the Fever Hospitals of Cork, at a Time when they were crowded with Patients, labouring under Febrile Cantagion. By EDMUND DAVY, Esq. Professor of Chemistry, and Secretary to the Cork Institution.

[The following experiments originally appeared in the Cork Intelligencer, December 9, 1817; their accuracy and importance appeared, however, to render them proper for our Journal.]

[From the London Medical and Physical Journal.]

FROM numerous experiments made on air, collected in different countries, by the most enlightened enquirers, it seems to be generally admitted, that the chemical constitution of the atmosphere is nearly the same at all seasons of the year, and in all parts of the globe. Nitrogen and oxygen gases, form its principal component parts: it also contains a minute portion of carbonic acid gas, and a variable quantity of aqueous vapour. As oxygen gas is essential to animal and vegetable life, and to the processes of combustion, fermentation, &c. and, as it is constantly entering into new forms, by which its peculiar properties are modified or destroyed, it is considered the most important, and the most active part of the atmosphere. The most general and important change that the oxygenous portion of the air undergoes is its conversion into carbonic acid gas, a substance, which, though obnoxious to animals, is yet made subservient to vegetable life; and this change

is invariably connected with the exertion of the vital functions of organic beings, and with the burning of coals, wood, candles, &c. The salubrity and healthy state of the air depend, in a great measure, upon the quantity of oxygen gas it contains ; and, this quantity (about 21 per cent.) appears to exist in all places exposed to the free atmosphere and the influence of winds. But the same uniformity of composition does not prevail in the air of confined dwelling-houses, crowded theatres, and hospitals, that are badly ventilated. At a time when typhus was very prevalent in Cork, and there were, in the two fever hospitals, about 280 patients, labouring, for the most part, under febrile infection, it occurred to my friend Dr. Daly, whose active exertions in the cause of humanity are well known, and likewise to myself, that it would be a desirable object to ascertain the state of the air in the fever-wards ; and I immediately undertook a series of experiments on the subject. To give in detail all the minutiae of my experiments, would far exceed the limits of this paper ; I shall, therefore, briefly notice my methods and results, and close the communication with a few observations connected with the subject. I procured air from five large and small wards in the House of Recovery, and from the two wards in Peacock-lane Hospital : I collected it from different parts of the rooms ; as, in the middle, at the sides, near the floor, and at different heights from it, and close to the beds of the patients. In every instance, the air was obtained by emptying on the spot bottles that had been previously filled with distilled water, and immediately closing them. The bottles were perfectly air-tight, being all furnished with well-ground glass stoppers. The air was examined soon after it had been collected. The first and most important object of my inquiry, was to ascertain the quantity of oxygen gas in the several bottles of air. For this purpose, I employed hydrogen gas, and the electric spark ; a method that seems to unite more simplicity and elegance than any other ; and, with due precaution, is susceptible of great accuracy. As the purity of the hydrogen, used in experiments of this kind, is of consequence to the accuracy of the results, it may be proper to notice the mode by which it was obtained ; especially as it has, I think, some little novelty, and seems to be quite unexceptionable, precluding all source of error, from the presence of common air. I put some small pieces of zinc into a glass and nearly filled

it with water that had been boiling for some time. I then filled a tube with the boiling water, and inverted it in the glass, and after adding sulphuric acid, I shortly after collected the gas.

I made a great number of experiments, using, in every instance an excess of hydrogen gas. In every trial, I mixed 0.30 of a cubic inch of the air under examination with 0.30 of pure hydrogen gas; and, after agitating the mixture in a long, thick, detonating tube, furnished with wires, the charge of a Leyden phial was passed through the tube; and the residual air, on being transferred to the cubic inch measure, occupied about 0.40 of it. I venture to state this as a general result; for, though, in a few cases, there was a difference of about one per cent. more or less, yet this difference was rather apparent than real, owing to the difficulty of measuring uniform quantities of air, and it was corrected by a careful repetition of the experiments. Now, as two volumes of hydrogen and one of oxygen gas enter into the composition of water,—if the foregoing results are made the basis of a calculation,—the apparent quantity of the oxygen gas in the air from the different fever-wards will amount to about 22.22 per cent.; but this is not the real quantity; a slight allowance must be made for a minute portion of air disengaged from the water after the detonation of the mixed gases; and, when this is taken into account, the oxygen may be fairly estimated at about 21 per cent. And, according to the statements of Sir Humphry Davy, and other able chemists, 21 per cent. is the actual quantity of oxygen gas in the external atmosphere, in different parts of the globe. It may be remarked, that, the variations in the temperature and pressure of the atmosphere during the preceding experiments were so small, as not to influence the accuracy of the general results stated.

With a view to confirm the preceding statements, I made comparative trials upon air collected from the open atmosphere, at the top of the observatory belonging to the Cork Institution; a situation, perhaps, not less salubrious than any other in Cork. The experiments were conducted in a manner precisely similar to those I have noticed; part of the same hydrogen was employed, and every precaution used to ensure accuracy. And, in every case in which the electric spark was passed through a mixture of the air under examination and hydrogen gas, in the proportion of 0.30 of each, the residual air measured about 0.40. I collected air from

Hugh's-lane, a place notorious for the number of cases it had furnished of typhus; but it yielded on examination, the same uniformity of result.

I have made some trials on the other gaseous constituents of the air, collected from the different fever-wards, and compared them with similar experiments on air from the observatory of the Institution; and, I have found a very near coincidence in both series of results.

Thus, judging from the absorption that took place in the bottles of air from the fever-wards, when placed for some time in water, and when agitated in this fluid,—and, especially from the effects of lime-water on the air,—and, comparing, by similar trials, air collected from the atmosphere in salubrious situations; I could scarcely, in either case, discover a perceptible difference in the quantity of carbonic acid gas. In one instance, I filled a two-quart ground-stoppered bottle with the air from a large ward at the House of Recovery; and, on the spot, I put into the bottle a small phial of lime-water, and well closed it. After much occasional agitation, and an interval of about two days, I examined the carbonate of lime formed, and compared it with the quantity produced under similar circumstances from the same bottle filled with air from the observatory, and treated with lime-water; and I was unable, in this way, to detect any appreciable difference. If this method may be relied on, I think I may venture to state, that the air from the ward did not contain near one per cent. more of carbonic acid gas than the air from the observatory. After I had separated oxygen and carbonic acid gas from the different airs examined, I could not detect the presence of any other gas than nitrogen, which exhibited its characteristic negative properties. The want of leisure prevented me from varying and multiplying my experiments, so as to ascertain the exact proportion of the carbonic acid and nitrogen gases in the airs; and it may be proper to observe that, during the time I was engaged in this enquiry, the variations of temperature, moisture, and pressure of the atmosphere, were very small, and too often connected with accidental circumstances, to be accurately noticed.

Successful Operation of Paracentesis of the Thorax. By NICHOLAS ARCHER, M. D. Licentiate of the King's and Queen's College of Physicians in Ireland, &c. &c. Read 2d August, 1818.

[From the 2d vol. Transactions of the Association of Fellows and Licentiates of the King's and Queen's College of Physicians, in Ireland.]

As there are but few cases of Paracentesis of the Thorax, terminating favourably, on record, the following case, containing some interesting circumstances, may not be unacceptable to the Medical Association.

In the month of October, 1798, I was sent for to visit a gentleman, aged 41, who, until within the last three years, had enjoyed very good health, was of a strong athletic form, and lived a temperate life.

I could collect from his physician, that about three years previous to my visit, he had an attack of pleurisy, which yielded to two general bleedings, a blister, and the antiphlogistic regimen. Shortly after his recovery from this attack, (which seemed to be confined chiefly to the right side of the thorax,) he began to complain of a short dry cough, a sense of heat in the right side, not amounting to pain, difficult breathing on using any exertion, palpitation and lividity of countenance. When he remained quiet his breathing was perfectly tranquil, and his countenance natural.

He had consulted most of the medical men in London, and in Edinburgh, whose several opinions coincided in recommending him to remove to a more temperate and southerly climate. According to the recommendation of these medical gentlemen, he went over to Lisbon, and from thence into the interior of Portugal, where he remained for more than a year, without reaping the smallest advantage by the change, which induced him to return home. Whilst in Portugal, he thought that he could perceive the motion of a fluid in the right side of his thorax, and endeavoured to impress this idea upon his medical friends, whom he revisited on his way home, but without effect.

On my visit to him, which was nearly three years after his first attack of Pleurisy, he complained of all the above recited symp-

toms, but in a much more aggravated degree ; his countenance nearly approaching to dark lividity, and his pulse at 130 in a minute ; great emaciation ; but still his breathing was but little disturbed, except on exertion.

He begged of me to examine him very particularly, for which purpose, I placed him on his back, a little inclining to his right side, and pressed strongly with my fingers between the ribs of his right side. On his gently agitating his chest, I distinctly perceived an undulating motion under my fingers, and on applying my ear close to the part, I could hear a noise like that produced by shaking a small cask not quite full of water.

I told him, that his idea of the existence of water in his chest was well founded, that it would be most difficult to remove it by absorption, and recommended that it should be drawn off by operation. He submitted to the suggestion with the greatest alacrity, and in a short space of time, two other medical gentlemen were procured, who agreed that nothing less than the Paracentesis of the Thorax could serve him.

The operation was accordingly performed, and eleven pints of an inodorous fluid, resembling whey, were gradually abstracted. The tube of the canula was frequently obstructed by a solid substance, but on the introduction of a probe, it used to pass off. On examining these solid substances, they were discovered to be small branches of the bronchiæ in a shrivelled decayed state.—During the drawing off of the fluid, his pulse gradually diminished in quickness, and increased in fullness ; and at the close of the operation, they rested at eighty-six.

For some few days after the operation, the discharge from the orifice amounted to nearly two pints in 24 hours, of the same kind of fluid, but it gradually lessened. His breathing became free—the lividity of his countenance disappeared—his appetite mended—he daily gained flesh—he was able, in a few weeks, to walk and ride out in the open air, and his cough nearly subsided.

At his own suggestion, a slightly astringent lotion was thrown into his chest through the open orifice ; at first consisting of a small portion of lime water mixed with rennet whey, and in a short time, we ventured on a weak solution of sulphat of zinc in rose water, with the most decided advantage. In four months,

all discharge nearly ceased ; he gained strength, and enjoyed tolerably good health for three years.

It would appear, as if the first attack of pleurisy which this gentleman had suffered, had been the cause of all his after symptoms. It is probable, that an ulceration of the external pleura had taken place, and that a small lymphatic had been included in this ulceration, which gradually oozing its lymph into the right cavity of the chest, occasioned a gradual compression of the lungs ; which, in the course of the progress of the disease, must have been compressed into a very contracted space. It would appear too, as if the lungs themselves were free from ulceration, as he had but little cough, and but very little expectoration, which was perfectly mucous, and not approaching to the nature of the fluid drawn off.

Eleven pints of fluid would nearly occupy the whole of the right cavity of the chest ; therefore, there could be no space at that side for the lungs to expand in inspiration. He had no œdema.

A Case on the Use of Turpentine. By WHITLOCK NICHOLL,
M. D. F. L. S. Member of the London College of Physicians,
and of the Medical and Chirurgical Society of London. Read
by Dr. Brooke, 1st. June, 1818.

(From the 2d. Vol. Transactions of the Association of Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland.)

AUGUST 27, 1817, I visited Miss Cradock, a girl about 12 years old. I found her with a hurried, feeble pulse, the tongue black, not furred, but looking as if it had been rubbed over with black earth ; the bowels distended. She had been much purged at first, without the aid of medicine, and afterwards by mercurial and other purgatives. I ordered for her mercurial pills, and some saline aperients ; but before these were administered, she voided a quantity of black grumous stool, which filled above half of the

pan of the night chair. To cut the detail short, it may suffice to say, that although by strict attention to the bowels, stools of a natural appearance were procured, and the tongue became clean, yet still the following symptoms continued during a fortnight:—constant drowsiness, great indisposition to speak, great tremulous debility, an incessant sense of irritation in the nose, particularly in the right nostril, a dark red circumscribed hue on each cheek, pulse generally frequent, skin constantly dry, and intensely hot, as if a heated iron were buried under the muscles; appetite keen, or rather I should say, that as often as food was offered, it was caught at and devoured in a hurried manner—a death-like coldness of the hands, coming on generally every day, with an uncertain increase of the frequency of the pulse—bowels regularly open—stools of a natural appearance—no head-ach; nothing remarkable in the character of the eye; emaciation. If at any time the least quantity of wine or of any cordial or tonic medicine was given, it instantly lighted up high febrile symptoms. Salines, diaphoretics, purgatives, all were tried to no purpose; the last dose which she had taken of the latter class, consisted of a full proportion of aloes, calomel and pulvis stanni.

September 17. All the symptoms which have been enumerated, have continued unabated. I this day gave her Ol. Terebinth: 3iss in Syr. Tolut. 3vi. This dose was repeated after the lapse of two hours. In two hours after this second dose was taken, I ordered a similar mixture, which had been intended for a third draught, to be thrown into the rectum, and I gave of the Ol. Ricini. 3ss. by the mouth. These means produced two copious stools, in which there was nothing worthy of notice, the appearance of them being similar to that of the stools of preceding days, yet from this time, all her symptoms disappeared; they vanished as by the force of magic, and the patient rapidly recovered her former health; and she continues at the present day, perfectly well.

Where and what was the disease in this case? I considered the cause of the symptoms to be seated in the alimentary canal: at one time I suspected taenia to be the cause, but I examined the evacuations which were produced by the turpentine and the oil, and no traces of worm could be seen. What the particular state of the membrane lining the canal was, which so long kept up such marked symptoms, and which so instantaneously disappeared after the exhibition of the turpentine, I cannot pretend to say.

MISCELLANEOUS ARTICLES, &c.

Reply to an Article in No. IV of the New England Medical Journal, addressed to the Editor of the Medical Recorder, Communicated by William Meade, M. D.

ON taking up lately No. IV, of the New England Journal of Medicine and Surgery, edited in Boston, and stated to be conducted by a number of Physicians, I observed an article entitled, a Review of the Analysis of the Waters of Ballstown and Saratoga, which calls for some observations from me on the subject.

It is not my intention to criticise the whole of that Review, particularly the chemical part of it, every person in any degree acquainted with chemistry knows, that there are few instances where an Analysis of the same substance, undertaken by two different chemists, agree in every particular; I shall therefore only remark, that if muriat of lime was not found in those waters by a *Saratoga* practitioner, it was, because he never suspected or looked for it, as will appear in what he styles an Analysis, because certainly I am not to look for his Analysis in what he calls an Appendix, or Defence of his Pamphlet; further, I may observe, that it would be much more singular not to detect the muriats of lime and magnesia, than to find them absent, as every mineral water containing muriate of soda, that has ever been examined, has been found to contain also muriats of lime and magnesia, from which circumstance, the salts which are obtained by evaporation from such waters, have a great tendency to diliquescence.

No person, except Dr. Dana, has pretended to doubt whether these waters contained any proportion of iron, however, they may differ with respect to the quantity. I am satisfied that I have stated the proportions of iron in each of these waters with tolerable accuracy, and until it is controverted by a more experienced chemist I must continue to think so—nor am I at all inclined to give up this opinion from the results of any experiments made to,

determine the quantity by what the *Saratoga* Practitioner calls his *Prutiat* of lime, a test, even if he meant *Prussiat* of lime which never was before relied on by any experienced chemist, but which appears perfectly satisfactory to the Boston Reviewers.

The more immediate object of this communication is to make a few remarks on a difference of opinion between me and those physicians who edit the *Boston Journal*. In page 138 of my work* I have stated the symptoms of a disease which is of frequent occurrence in the Eastern States, and which is there denominated *Dyspepsia*, suggesting, that from its very marked character it materially differs from genuine *Dyspepsia*, and should be considered as a species of *Marasmus* originating from organic obstructions in the glands of the stomach or mesentery, and requiring a different mode of treatment. I know of nothing in this statement that should excite the feelings of those *Medical Reviewers*, except the apprehensions that any suspicion should arise that the climate of *Boston* was not the most congenial to the human constitution, a very natural prejudice which it is neither my inclination nor my business to dispute. But while they allow the accuracy of my statement, and acknowledge that those extreme symptoms which I have described have actually appeared in two or three instances, they roundly assert that no such disease has really prevailed in *Boston* of late years, directly in opposition, not only to their own statement but to the experience and knowledge of those who reside in their neighbourhood.

From the period of life when attacks of this complaint are most frequent, from the general formation of those persons who are affected with it and from the symptoms and usual termination of the disease, I have endeavoured to draw the conclusion that it partakes of a scrophulous nature. In which opinion I have been strengthened by the well established fact, that this complaint, as well as *scrophula* is a disease of a cold climate and is alleviated by change to a milder one; while genuine *dyspepsia* is a disease principally of a warm climate and is alleviated by change to a colder one.

* *Vide an Experimental Enquiry into the Chemical Properties and Medicinal Qualities of the Waters of Ballstown and Saratoga.* By W. Meade, M. D.

The New England Medical Reviewers assert that scrophulous disorders are comparatively rare in Boston, and that this species of Dyspepsia is not aggravated in the winter months nor relieved by a change to a warmer climate. Let me now ask those medical gentlemen whether they are serious in stating that scrophula is not a disease of a cold and variable climate or in asserting that it does not prevail in the neighbourhood of Boston? do they know of no other species of scrophula but that which appears on the surface of the body? Are they prepared to deny that phthisis pulmonalis is not the most fatal scourge of the population of that section of the Union, or are they disposed to contravert the opinion of all medical writers that scrophula is the principal exciting cause of this disease if it does not entirely originate in a scrophulous diathesis? Can they be serious in asserting that this peculiar species of Dyspepsia, if it can be called Dyspepsia, is aggravated in the summer months and alleviated in the winter? How does it happen that those medical gentlemen are the only persons unacquainted with the fact that medicine has done little to alleviate the symptoms of those who are affected with what they call Dyspepsia, while change of residence from the cold and variable climate of Boston to a more temperate atmosphere, has uniformly produced a salutary change in the constitution? Before a physician draws conclusions it would be well if they were established from facts; further experience and subsequent enquiry has tended to satisfy me that this disease so tedious and distressing is not like Dyspepsia vera, confined to the middle aged. But on the contrary, the most marked cases which have come to my knowledge commenced in early life and terminated favourably as the constitution attained strength and vigor.

From these facts I have endeavoured to show that this disease partakes of a scrophulous nature, and for the following reasons. First, as it occurs in scrophulous climates and in scrophulous constitutions. Second, That it neither arises from the same causes as Dyspepsia nor commences at the same period of life, nor does it exhibit the same symptoms or is it cured by the same means.

I am accused by my friends, the Medical Reviewers of having stept out of my way, in giving my view of diseases and their mode of cure. Let me observe that I should rather be charged with neglect if when treating of the medicinal qualities of mineral waters.

and their application to different diseases, I had omitted to point out the use and abuse of such waters in the most prominent complaints, as far as my experience as a physician had enabled me to judge, under the persuasion that without a discriminating knowledge of diseases, neither medicine nor mineral water can be prescribed with advantage, nor do I see how any objections can be made to such an enquiry unless those gentlemen conceive that they, and they only, have an exclusive right to give their opinion on the nature of diseases, and particularly of those that are peculiar to their own section of the country.

While I allow that the works of all authors lie open to criticism, yet it should be fair and legitimate criticism, no facts should be asserted which are not thoroughly established, and no quotations should be made which are not accurately stated. It would not be treating those reviewers with fairness or candor, were I to omit giving them an opportunity of explaining their own ideas of the Boston Dyspepsia. I shall therefore for the edification of the reader quote their own words when concluding their remarks on the subject,* as follows :

" If it be asked, whether indigestion be actually more prevalent in Boston than other American towns, where good living is equally common, we should make our reply with due circumspection. We should allow, that a few severe and remarkable cases have existed, and excited much attention both here and at the Ballstown springs ; but might add, that we have noticed ladies and gentlemen, of other cities than Boston, who were travelling about in search of health, under the severe affliction of *bilious* complaints, which, to our eyes, exhibited a considerable resemblance to the Boston Dyspepsia. It would look like presumption to say, that, in such cases, the mischief is more likely to proceed from a weak stomach, than a corrupt liver ; but, at least, it will be generally admitted by impartial people, that of all our organs, there is none more commonly ill used and over-strained than the gastric viscus. Possibly we might be disposed to go a little farther, and allow, that the stomach, in the inhabitants of Boston, is endowed with a more obstinate and reluctant character than that of other people ; whence, instead of exhibiting its revenge for abuse, in a slow and gentle manner, on our ligaments and membranes in the

* New England Medical Journal, p. 385.

form of gout, or on the liver in the shape of *bilious* complaints, it enters at once into a contest with the articles of food that are presented to it, and either repels them without ceremony, or converts them into biting acids, and horrible explosive gases, which produce the formidable train of symptoms described by Cullen—“Anorexia, nausea, inflatio, ructus, ruminatio, cardialgia, gastrodynbia,” &c. and sometimes even the more formidable phenomena, so eloquently represented by Dr. Meade.”

I hope those medical gentlemen will not accuse me of stepping out of my way in remarking that in this quotation I perceive neither the language of a physician nor the reasoning of a philosopher.

In a Review said to be conducted by a number of physicians, Ridicule can scarcely be expected; the gravity of the subject, and the character of the profession utterly forbid it, and yet when we read that “the Boston stomach is endowed with a more reluctant character than that of other people and that in revenge for abuse it enters into contest with the food, and repels it with *horrible explosions and biting acids*; we can scarcely refrain from concluding that the subject is discussed either with great ignorance or great levity. Whether the inhabitants of Boston will be pleased with this description of the structure and character of their stomachs as drawn by their own physicians it is not for me to determine, congratulating myself however that I have never been exposed to those *horrible explosions* which they so pathetically describe, I now take my leave of those medical gentlemen thanking them for the new light which they have thrown on the subject of Dyspepsia.

Mr. Charles Bell, in a letter to Professor Gibson, of Baltimore, dated October 3, 1818, says—“The only novelty is the new coat of the eye, discovered by M'Cartney's demonstrator Mr. Jacobs. You will find it on the outside of the retina, by cutting off the sclerotica and choroides, and looking on the retina in water. There is a pretty way of demonstrating such minute things by inverting a bell glass full of water over them; for then the left membranes float in the water and the parts are magnified.

Astley Cooper told me last night at the anatomical society that he finds the largest tumours of exostosis absorbed by simply cutting down upon them and separating the periosteum from the surface of the bone by the handle of the knife."

The Elements of Surgery, by Dr. Dorsey, the late distinguished Professor of the University of Pennsylvania, has been republished in Edinburgh as a text book for the students of that school. This is the first American book which has received that honour.

Port Folio.

THE PHILADELPHIA MEDICAL SOCIETY,

Desirous of promoting the advancement of Medical Science, by obtaining and preserving accurate histories of the epidemical diseases of this country, have authorized their Corresponding Secretaries, on behalf of the Society, to offer a *Gold Medal* of the value of *One Hundred Dollars*, for the best Dissertation on the *History, Description, and most successful mode of Cure* of the epidemic, which has prevailed in various parts of the United States, for the last few years, commonly known by the name of *Typhus or Spotted Fever*. The essays must be written in the English or French language, and transmitted under cover, sealed, to one of the Corresponding Secretaries, on or before the first day of January, 1820. The name of the author must accompany each essay, in a separate, sealed envelope. The envelope containing the name of the successful author shall alone be opened. The essays shall be at all times at the command of the authors.

The publication of the Essay to which the medal shall be awarded, shall be optional with the Society; but should it be published, the emoluments arising therefrom, shall be secured to the author.

Communications, post paid, may be directed either to
DR. THOMAS T. HEWSON,
 No. 132, Chesnut-street, or
DR. JOHN BARNES,
 No. 203, Arch-street.

Corresponding Secretaries of the Philadelphia Medical Society.

The Society of Sciences of Haarlem have proposed the following questions for consideration, previous to January 1, 1820.

1. How far has it been demonstrated that the fumigations by chlorine, as directed by Guyton, have prevented the spreading of contagious maladies? What are the contagious maladies in which the effect of this gas deserves to be tried? And what ought to be observed in such experiments? Is there any reason to expect a more salutary effect, in the prevention of contagion from any other means hitherto employed or proposed?

2. What are we to regard as distinctly proved, in respect of the gastric juice of the human body, and its influence in the digestion of food? Is its existence sufficiently proved by the experiments of Spallanzani and Senebier? Or has it been rendered doubtful by the experiments of Montégre? What is it, that comparative anatomy, and principally the opening of the stomach of animals killed, either after fasting, or in a short time after having taken food, have rendered probable in this respect? And in the case of the existence of the gastric juice in the human body, being regarded as a fact perfectly established, what ought we to avoid, in order not to impair its effect in the process of digestion?

The prize for the best answer, is 150 florins.

5. In consequence of the gift of a sum of money by an anonymous person, for the foundation of a prize in physiology, the Royal Academy of Paris have announced that a gold medal of 440 francs value, will be given to the author of that printed work or manuscript, sent to them before the first of December, 1819, which shall appear to have contributed most to the progress of Experimental Physiology; and their decision will be announced early in 1820.

PRIZE QUESTIONS.

2. The medical circle of Paris (Academy of Medicine) have given as a prize subject "To determine the influence of Patho-

logical Anatomy (Morbid Anatomy) on the progress of medicine in general, and particularly on the diagnosis and treatment of internal diseases. The prize, a gold medal of 300 francs value, to be decreed at an extraordinary public sitting, which will take place, October, 1819. The memoirs written in French or Latin, to be sent before August, 1819, to M. le Dr. Chordel, Secrétaire générale du cercle Medical, Rue Casette, Paris.

2. The Society of Medicine of Marseilles have proposed as the subject for dissertation for 1819, the following questions :

1. "What are the diseases of the uterus, which are liable to be confounded with cancer and ulceration of that organ?"
2. "What are the characteristics by which they may be decidedly distinguished?"
3. "What are the curative or the palliative measures that experience has proved to be most efficacious?"

It is requested that chemical observations and examination after death, be the basis of the observations made. The memoirs to be written in French or Latin, and sent to M. Trucy, Secretary to the Society, before July 1819. The prize, a gold medal of 300 francs value.

3. The Royal Medical Society of Bordeaux has given as a subject, "What are the results of too rapid growth?" What are the means adapted to moderate its progress, if it became injurious, and to remedy the accidents which ensue from it?" The memoirs to contain positive facts, supported by practical medicine, and not the mere development of hypothesis; to be written in French or Latin, and sent to the Secretary, before July, 1819.—The premium 300 francs.

Dr. Ures' Experiments on the Body of a Criminal after Execution.

"The subject of these experiments was a middle sized, athletic, and extremely muscular man, about thirty years of age. He was suspended from the gallows nearly an hour, and made no convulsive struggles after he dropped; while a thief executed along with him, was violently agitated for a considerable time. He was brought to the anatomical theatre of our university in about ten minutes after he was cut down. His face had a perfectly natural aspect, being neither livid nor tumefied; and there was no dislocation of his neck.

Dr. Jeffray, the distinguished Professor of Anatomy, having, on the preceding day, requested me to perform the galvanic experiments, I sent to his theatre with this view, next morning, my *minor voltaic battery*, consisting of 270 pairs of four inch plates, with wires of communication, and pointed metallic rods, with insulating handles, for the more commodious application of the electric power. About five minutes before the police officers arrived with the body, the battery was charged with a dilute nitro-sulphuric acid, which speedily brought it into a state of intense action. The dissections were skilfully executed by Mr. Marshall, under the superintendance of the Professor.

EXPERIMENT 1. A large incision was made into the nape of the neck, close below the *occiput*. The posterior half of the *atlas vertebra* was then removed by bone forceps, when the spinal marrow was brought into view. A considerable incision was at the same time made in the left hip, through the great gluteal muscles, so as to bring the sciatic nerve into sight; and a small cut was made into the heel. From neither of those did any blood flow. The pointed rod connected with one end of the battery was now placed in contact with the spinal marrow, while the other rod was applied to the sciatic nerve—every muscle of the body was immediately agitated with convulsive movements resembling a violent shuddering from cold. The left side was most powerfully convulsed, at each removal of the electric contact—on moving the second rod from the hip to the heel, the knee being previously bent, the leg was thrown out with such violence, as nearly to over-

turn one of the assistants, who in vain attempted to prevent its extension.

EXPERIMENT 2. The phrenic nerve was now laid bare at the outer edge of the *Sterno-thyroideus* muscle, from three to four inches above the clavicle; the cutaneous incision having been made by the side of the *sterno eleido-mastoideus*. Since this nerve is distributed to the diaphragm, and since it communicates with the heart through the eighth pair, it was expected by transmitting the galvanic power along it that the respiratory process would be renewed. Accordingly a small incision having been made under the cartilage of the seventh rib, the point of the one insulating rod was brought into contact with the great head of the diaphragm, while the other point was applied to the phrenic nerve in the neck.—This muscle, the main agent of respiration, was instantly contracted, but with less force than was expected. Satisfied, from ample experience on the living body, that more powerful effects can be produced in galvanic excitation, by leaving the extreme communicating rods in close contact with the parts to be operated on, while the electric chain or circuit is completed, by running the end of the wires along the top of the plates in the last trough of either pole, the other wire being steadily immersed in the last cell of the opposite pole, I had immediate recourse to this method. The success of it was truly wonderful. Full, nay, laborious breathing, instantly commenced. The chest heaved and fell; the belly was protruded, and again collapsed with the relaxing and retiring diaphragm. This process was continued, without interruption, as long as I continued the electric discharges.

In the judgment of many scientific gentlemen who witnessed the scene this respiratory experiment was perhaps the most striking ever made with a philosophical apparatus. Let it also be remembered that for full half an hour before this period, the body had been well nigh drained of its blood, and the spinal marrow severely lacerated. No pulsation could be perceived mean while at the wrist; but it may be supposed, that but for the evacuation of the blood, the essential stimulus of that organ—this phenomenon might also have occurred.

EXPERIMENT 3. The supra-orbital nerve was laid bare in the fore-head, as it issues through the supra-ciliary *foramen* in the eye-brow; the one conducting rod being applied to it, and the other

to the heel; most extraordinary grimaces were exhibited every time that the electric discharges were made, by running the wire in my hand along the edges of the last trough, from the 220th to the 227th pair of plates;—thus, fifty shocks, each greater than the preceding one, were given in two seconds; every muscle in his countenance was simultaneously thrown into frightful actions; rage, horror, despair, anguish, and ghastly smiles united their hideous expression in the murderer's face, surpassing far the wildest representations of a Fuseli or a Kean. At this period several of the spectators were forced to leave the apartment from terror or sickness, and one gentleman fainted.

EXPERIMENT 4. The last galvanic experiment consisted in transmitting the electric power from the spinal marrow to the ulnar nerve, as it passes by the internal condyle at the elbow; the fingers now moved nimbly, like those of a violin performer; an assistant, who tried to close the fist found the hand to open forcibly, in spite of his efforts. When the one rod was applied to a slight incision in the tip of the fore-finger, the fist being previously clenched, that finger extended instantly, and from the convulsive agitation of the arm, he seemed to point to the different spectators, some of whom thought he had come to life.

An hour having been spent in these galvanic operations, I then prepared to execute an experiment with the view of determining by a new and simple mode the quantity of residual air in the lungs. This physiological problem has been attempted to be solved in a great variety of ways; and the wide discrepancy of the results obtained by eminent philosophers satisfied me, that the methods of operating hitherto adopted must be more or less erroneous. The *trachea* being cut across below the *pomum adami*, a short brass tube was introduced into it, and firmly secured in its place by hooping with packthread; into this tube a stop cock was screwed air tight.—A glass globe of 159.3 cubic inches in capacity with an attached brass cap and stop-cock for weighing gasses, being previously exhausted by an excellent air pump, and nicely poised at a delicate balance, was now connected with the stop-cock in the *trachea*. A small opening was then carefully made on each side into the *thorax*. When the communication between the globe and the lungs was opened by turning the stop-cock, the air was heard to rush forcibly into the former with a

whizzing sound; when this ceased, the stop-cocks were again shut, the globe unscrewed, and suspended at the balance.

Its increase of weight was found to be exactly 31.8 grains: to ascertain whether the lungs and attached brass tube were perfectly air tight, the globe was again connected with the wind-pipe, as before, and on re-opening the communication, a momentary puff of air only was heard to enter the globe; after which no sound of moving air could be perceived; the additional increase of weight was only 1.6 grains, though the connection was left open for some time, and though the globe was not more than two-thirds replenished with air, or the included air was only two-thirds of the atmospherical tension.

By subsequent examination, the bulk of these 33.4 grains of air was found to be 105.2 cubic inches, consisting of about 91 of azote, mixed with a little oxygen and 14.2 of carbonic acid. It is possible that a larger portion of carbonic acid than $13\frac{1}{2}$ per cent. would have been found before the galvanic respiration, though from the accurate experiments of M. M. Allen and Pepys, we see that breathing becomes intolerable with atmospherical air, charged with 10 per cent. of that noxious gas. By the preceding method it is obvious, that the whole of the residual air may be readily extracted from the lungs without doing the slightest violence to their texture, while the fallacies incident to some of the former plans of experimenting are avoided; yet my result coincides very well with Dr. Goodwyn's determination of 109 cubic inches, obtained in a very different way.—Variations must be expected according to the size of the person's *thorax*.

In deliberating on the above galvanic phenomena, we are almost willing to imagine, that if, without cutting into and wounding the spinal marrow and blood vessels in the neck, the pulmonary organs had been set a playing at first, (as I proposed) by electrifying the phrenic nerve (which may be done without any dangerous incision) there is a probability that life might have been restored. This event, however little desirable with a murderer, and perhaps contrary to law, would yet have been pardonable in one instance, as it would have been highly honourable and useful to science. From the accurate experiments of Dr. Philip, it appears that the action of the diaphragm and lungs is indispensable towards restor-

ing the suspended action of the heart and great vessels, subservient to the circulation of the blood.

It is known, that cases of death-like lethargy, or suspended animation, from disease and accidents have occurred, where life has returned, after longer interruption of its functions than in the subject of the preceding experiments. It is probable, when apparent death supervenes from suffocation with noxious gas, &c. and when there is no organic lœsion, that a judiciously directed galvanic experiment, will, if any thing will, restore the activity of the vital functions. The plans of administering voltaic electricity hitherto pursued in such cases, are, in my humble apprehension very defective. No advantage, we perceive, is likely to accrue from passing electric discharges across the chest, directly through the heart and lungs. On the principle so well developed by Dr. Philip, and now illustrated on Clydsdale's body (the criminal) we should transmit along the channel of the nerves, that substitute for nervous influence, or that power which may, perchance, awaken its dormant faculties.

Then, indeed, fair hopes may be formed of deriving extensive benefit from galvanism; and of raising this wonderful agent to its expected rank, among the ministers of health and life to man.

I would however beg leave to suggest another nervous channel, which I conceive to be a still readier and more powerful one, to the action of the heart and lungs, than the phrenic nerve.

If a longitudinal incision be made, as is frequently done for aneurism, through the integuments of the neck at the outer edge of the *sterno-mastoideus* muscle, about half way between the clavicle and the angle of the lower jaw; then on turning over the edge of this muscle we bring into view the throbbing carotid, on the outside of which the *par vagum* and great sympathetic nerves lie, together in one sheath. Here therefore, they may both be directly touched and pressed by a blunt metalic conductor. These nerves communicate directly or indirectly with the phrenic; and the superficial nerve of the heart is sent off from the sympathetic. Should, however, the phrenic nerve be taken, that of the left side is the preferable of the two. From the position of the heart, the left phrenic differs a little in its course from the right—It passes over the *pericardium* covering the apex of the heart.

While the point of one metallic conductor is applied to the nervous cords above described, the other knob ought to be firmly pressed against the side of the person, immediately under the cartilage of the seventh rib. The skin should be moistened with a solution of common salt, or what is better, a hot saturated solution of sal-ammoniac, by which means, the electric energy will be more effectually conveyed through the cuticle, so as to complete the voltaic chain.

Mr. Fox, Professor of Botany of Christiana, in Norway, states, in a letter, dated November 28th, to Dr. Miller, now in London, that M. Lampadius has lately discovered in some English ores, (the characters of which are not mentioned) a new metal, which he calls "*Wodanium*."

Annals of Philosophy.

Saffron supposed to prevent sea-sickness.—M. Cadet, who spent part of the summer of 1817 in London, mentions that when he crossed the channel from Calais to Dover, he observed an English gentleman with a bag of saffron suspended over his stomach—On inquiring the reason, he was told by the gentleman that it was a practice which he always followed when crossing the channel, because it preserved him from sea sickness. The remedy was found out, he said in the following way—A small merchant, who had occasion to make frequent voyages, was always tormented with sea sickness when on ship-board.—One day he embarked, after purchasing a pound of saffron, which he put under his shirt in order to avoid paying duty for it—He escaped without experiencing any sea-sickness, though the sea was rough. Ascribing this lucky escape to the saffron, he communicated his discovery to several of his friends who made repeated trials of the remedy, and always with success.

Annals of Philosophy.

Remedy for the Plague.

There have been several accounts received, though most of them uncertain, respecting the efficacy of vaccination in stopping the progress of the plague. M. Aubin, physician, at Constantinople, and M. Laford, physician at Salonichi, are said to affirm that it is a certain protection: of 6000 persons vaccinated at Constantinople, not one caught the infection of the plague, and the Armenians are described as being entirely free from it, in consequence of their care on this point.

Journal of Sciences and the Arts.

Deoxidation of Indigo.

The solution of indigo in sulphuric acid, may be readily deoxidized and rendered colourless, by throwing into it a few filings of iron or zinc; the hydrogen produced, effects the change, and much more readily, from being in the nascent state. If this discoloured solution, or rather the solution with a pale tint, be exposed to the air, it immediately resumes its blue colour.

Annales de Chimie, &c.

Dr. Thos. Forster has just published a small Tract on the periodical affections of the Brain and Nervous System. In endeavouring to deduce the periods of diseases from periodical changes in the atmosphere, the author alludes to the following remarkable circumstance—that the periods of many nervous diseases correspond with those well-known changes of weather which so often happen near the new and full moon, as to have been ascribed, even by popular opinion, to her special influence on the weather. He notices also numerous periodical plants, which open and shut their flowers at particular hours of the day and night, in order to prove an atmospherical cause of the periods observed by plants as well as animals.

The same author will shortly publish observations on the Periods at which the different Organs of the Brain become active, and those at which their activity ceases.

Tilloch's. Philos. Magazine.

A considerable work has long been expected from Dr. Spurzheim, on Education, founded on the knowledge of the Physiology of the Brain.

Meteorological.

The politeness of the Registers of Land Offices of the United States, and of several other gentlemen, has enabled me to collect meteorological facts and observations for nearly twenty years past. The places of observation extend from *Detroit* to *Ouachita, New-Orleans*, and *Savannah*; including a space of about 12 degrees of longitude and latitude.

The *Temperatures* by Fahrenheit's thermometer; and the *Winds* and the *Weather* are noted in the *Morning*, at 2 P. M. and in the *Evening*. If such observations are continued, (as I hope they will be,) for a few years, much interesting knowledge of the meteorology of our country will be effected. The following result of the observations for *December*, 1818, made at *Detroit*, by *Peter Audrain, Esq.* Register of the Land Office, and at *Savannah*, by *Augustus G. Oemler, Esq.* will serve as a specimen:

DETROIT.

<i>Mean Temperature.</i> —Morning,	21	71
2 P. M.	28	72
Evening,	24	09
For the month,	28	14
Highest on the 25th,	42	00
Lowest 16th,	4	00
Range of mercury,	38	00
<i>Winds.</i> —From the western semicircle,	54	00
From the eastern do.	18	00
From the cardinal points,	21	00
<i>Weather.</i> —Clear,	43	00
Cloudy,	39	00
Rain or snow,	11	00

SAVANNAH.

<i>Mean Temperature.</i> —Morning,	42	87
2 P. M.	59	68
Evening,	50	25
For the month,	50	93
Highest on the 10th,	74	00
Lowest 21st,	24	00
Range of mercury,	50	00

<i>Winds.</i> —From the western semicircle,	55	00
From the eastern do.	29	00
From the cardinal points,	9	00
<i>Weather.</i> —Clear,	68	00
Cloudy,	18	00
Rain,	9	00
Quantity of rain, 1 inch	46.100	

The mean temperature, for the month, at *Savannah*, was almost double that at *Detroit*.

The wind from the *western* semicircle of the horizon was, at *Savannah*, *three* times, and at *Detroit* *nearly twice* more frequent than from the *eastern*. But, in the summer, the proportion varies; for, in July, 1818, at *Detroit*, the *west* was, to the *east*, as 58 to 31—at *Savannah*, as 31 to 33.

Savannah is nearly on the *colluminium* of the variable and the trade winds. In the winter, the great aerial current declines to the south, and the westerly winds prevail at *Savannah*.

I take this opportunity of expressing my thanks to those gentlemen who have aided my wishes.

JOSIAH MEIGS.

Washington, March 11, 1819.

Meteorological.

<i>Detroit</i> is in latitude, north	42° 40' 0"
Longitude, west of the Capitol,	6° 2' 12"
<i>Savannah</i> —latitude, north,	32° 8' 0"
Longitude, west of the Capitol,	4° 14' 12"

Detroit, July, 1818.

<i>Mean Temperature.</i> —Morning,	66	29
2 P. M.	83	25
Evening,	71	87
For the month,	73	80

Highest, 11th day, 96 20.

Lowest, 1st. 51 00

Winds.—Western semicircle,

Eastern,	13
Cardinal points,	48

Weather.—Clear, 58

Cloudy, 26

Rain, 9

Savannah, July, 1818.

<i>Mean Temperature.</i> —Morning,	73	39
2 P. M.	92	54
Evening,	81	84
For the month,	82	59
Highest, 3d day,	101	
Lowest, 10th day,	72	
<i>Winds.</i> —Western semicircle,	47	
Eastern,	19	
Cardinal points—N. 4, S. 35, E. 4, W. 4.		
<i>Weather.</i> —Clear,	67	
Cloudy,	24	
Rain,	7	
Quantity of rain, 3 inches	21-100.	

JOSIAH MEIGS.

Washington City, March 18, 1819.

Statement of Deaths with the Diseases and Ages, in the City and Liberties of Philadelphia, from the first of January, 1818, to the first of January, 1819.

DEATHS IN EACH MONTH.	Adults.	Children.	Totals.	AGES.		
				Under 1 year	From 1 to 2	3 to 5
January,	165	72	235			628
February,	150	61	211	From 1 to 2		214
March,	151	89	240	2	5	118
April,	161	75	236	5	10	68
May,	138	66	204	10	15	35
June,	149	71	220	15	20	59
July,	143	178	321	20	30	370
August,	137	175	312	30	40	416
September,	105	112	223	40	50	316
October,	95	74	169	50	60	187
November,	139	59	198	60	70	138
December,	120	76	196	70	80	90
				80	90	67
				90	100	24
				100	110	5
Totals,	1651	1114	2765	Total,		2765

The above mentioned Deaths were caused by the following Diseases and Casualties, viz :

Aphæ,	5	Brought over,	1834
Asthma,	8	Scarlet,	1
Abscess,	11	Bilious,	34
Atrophy,	46	Nervous,	11
Apoplexy,	40	Inflammatory,	3
Angina Pectoris,	9	Intermittent,	3
Aneurism,	3	Fever, Hectic	3
Burns,	13	Gangrene,	21
Cholera Morbus,	203	Gout,	5
Catarrh,	16	Hives,	48
Consumption of the Lungs,	396	Hooping Cough,	6
Convulsions,	141	Hæmorrhage,	6
Chorea,	2	Hernia,	4
Casualties,	31	Insanity,	41
Cancer,	4	Jaundice,	4
Caries,	3	Inflammation of the Brain,	22
Cholic,	7	Lungs,	49
Debility,	89	Stomach,	32
Dyspepsia,	8	Bowels,	44
Dysentery,	31	Liver,	21
Dropsy,	99	Bladder,	2
In the Head,	67	Locked Jaw,	3
In the Breast,	5	Old Age,	65
Decay,	38	Pleurisy,	25
Diarrhœa,	49	Palsy,	37
Drowned,	39	Rheumatism,	10
Drunkenness,	10	Rickets,	2
Drinking Cold Water,	9	Syphilis,	12
Diabetes,	1	Suffocation,	4
Epilepsy,	9	Scrofula,	18
Erysipelas,	6	Still Born,	156
Fever,	59	Sudden,	29
Typhus,	311	Sore Throat,	17
Puerperal,	16	Spina Bifida,	2
Remittent,	55	Suicide,	1
 Carried over	 1834	 Carried over	 2575

Miscellaneous Articles, &c.

299

Brought over	2575	Brought over	2601
Small Pox, (natural)	8	Teething,	17
Schirrus of the Stomach,	2	Ulcers,	7
Spasm in the Stomach,	3	Worms,	8
Stone,	2	Unknown,	132
Tabes,	11		
	—	Total,	2765
Carried over,	2601		

By order of the Board,

JOSEPH PRYOR, Clerk.

Health Office, Feb. 18, 1819.

Of the above, there were :

Males of 20 years and upwards,	925
Ditto, under 20 years,	512
	— 1437
Females of 20 years and upwards,	754
Ditto, under 20 years,	441
	— 1195
Children, principally under one year, whose sex is unknown,	133
	—
Total,	2765

The City and Liberties of Philadelphia, are supposed to contain about one hundred and twenty thousand inhabitants.

Distribution of Caloric.—July, 1818.

Mean for the month.

Detroit	-	-	-	-	73	80
Wooster	-	-	-	-	77	99
Zanesville	-	-	-	-	78	04
Chillicothe	-	-	-	-	78	53
St. Louis	-	-	-	-	82	19
Jeffersonville	-	-	-	-	81	40
Cincinnati	-	-	-	-	78	87
Augusta	-	-	-	-	83	68
Milledgeville	-	-	-	-	87	04
Savannah	-	-	-	-	85	08

Difference of *Latitude* between Detroit and Savannah, $10^{\circ} 25'$.

Do. *Longitude* between Savannah and St. Louis, 8°

J. M.

MEDICAL COMMENCEMENT.

At a public commencement held at the University of Pennsylvania, April 15th, 1819. The following gentlemen received the degree of Doctor of Medicine—viz.

Canada.

George Larue,

{ **Méthodes d'ouvrier les bubons Philitiques.**

Connecticut.

George McClellan,
Alfred L. Munson,

Surgical Anatomy of Arteries.
Native Asclepias.

New-Jersey.

Frederick Richmond,
Theophilus E. Beezley,
Samuel M. Fisher,
Joseph H. Cook,
William H. McCalla,

Phthisis Pulmonalis.
Emetics.
Amenorrhœa.
Hæmoptysis.
{ **External application of Cold Water.**

Pennsylvania.

John Traner,
J. P. Freeman,
Abraham Stout,
John G. Marshall,
William Rankin,
Chandler Redfield,
Stephen Harris,
J. Russel Smith,
J. P. Price,
William Darrach,
Jesse R. Burden,
Benjamin R. McConnel,
Frisby H. Snow,

Theory of Secretion.
Influence of the Spinal Marrow.
Utility of Vinegar.
Hæmoptysis.
Effects of Mercury in Erysipelas.
History of Medicine.
Croup.
Blood-letting.
The Cataminia.
{ **Epidemic at the Alms-house, in 1817.**
Chimaphila Umbellata.
{ **Observations on the Materia Medica.**
Podophyllum Peltatum.

Chas. N. M'Coskry,

{ Use of Calomel in Chronic Rheumatism.

Thomas H. Connel,

Ophthalmia.

John S. Irwin,

Hysteritis.

Robert Allison,

Hypopyon.

Obadiah M. Dingee,

Hydrocele.

G. F. Kingle,

Light as a Medical Agent.

Jesse Coates,

Hydrocele.

William M. Sharp,

Blood-Letting.

Delaware.

John G. Maxwell,

Laurus Sassafras.

Samuel Sorden.

Vomiting.

William D. Brindle,

Herpes.

Maryland.

John R. Purnell,

Emetics.

Chesed Purnell,

Diarrhœa.

William H. Thomas,

Cynanche Trachealis.

District of Columbia.

Elijah R. Cravin,

Suspension of the Actions of Life.

Warwick P. Miller,

Suspended Animation.

Virginia.

J. K. Mitchell,

{ Proximate cause of Febrile reaction.

William Moseley,

Physiology of Menstruation.

John Minge,

Neuralgia.

J. W. F. Macrae,

Uterine Hæmorrhage.

J. Wheatley,

Emetics.

Charles Urquhart,

Anasarca.

William Gwathmey,

Cholera Infantum.

Edwin L. De Graffenreidt,

Influence of the Passions.

Edward Curd,

Uterine Hæmorrhage.

Wm. L. Powel,

Ascites.

Edward M. Ford,

Obstipatio.

William Davis,
 Mortimer Williams,
 Archibald Baldwyn,
 H. L. Davies,
 J. P. Hill,
 Alfred Murray,
 James Weeks,
 William A. Sykes,
 J. W. M. Wallace,
 Thomas P. Rives,
 Robert E. Bouldin,
 Littleberry N. Ligon,
 William R. Poindexter,
 Hugh G. Seymour,
 Robert M. Carter,
 Augustus H. Garnet,
 Richard A. Christian,
 Edward Wilcox,
 William R. Fontaine,
 Stirling Ford,
 John D. Spragins,
 John T. Ligon,
 W. F. Gooch,
 John H. Patterson,
 Mordecai C. Booth,
 Dick H. Egglestone,

Cynanche Trachealis.
 { Objections to the Sympathetic
 Doctrine of Conception.
 Cynanche Trachealis.
 Gastritis.
 Dysentery.
 Gout.
 Cholera Infantum.
 Remitting Inflammatory Fever.
 Hydrothorax.
 Anasarca.
 Amenorrhœa.
 Croup.
 Typhus Fever.
 Hydrocephalus Acutus.
 Croup.
 Tetanus.
 Chronic Inflammation.
 Marasmus.
 { Inflammatory Dysentery of our
 Climate.
 { Treatment of Fractures of the
 Extremities.
 Calomel.
 Epilepsy.
 Trachitis.
 Peritonitis.
 Balsam Copaiba.
 Hectic Fever.

North-Carolina.

Robert Hinton,
 John C. Smith,
 John Gatling,
 Henry L. Plummer,

Concussion of the Brain.
 Dysentery.
 Asthma.
 Dysentery.

South-Carolina.

John W. Simpson,	Cholera Infantum.
S. N. Hamilton,	Medical use of Phosphorus.
S. H. Dickson,	§ Yellow Fever of Charleston in 1817.
St. John Phillips,	Ol. Terebinthinæ.
Henry Baylston,	Button Snake Root.
Edmund Ravenel,	Dropsy.
Hugh L. Alison,	Regular Gout.
William L. Moultrie,	§ Best means of promoting Sup- puration.

Georgia.

Walter H. Weems,	Baptisia Tinctoria.
Abednego Wright,	Puerperal Fever.
Richard H. Randolph,	§ Bil. Remg. Fever, of Georgia, in 1817.
G. B. L. Bush,	Asclepias Syriaca.
David Holt,	Nourishment of Fœtus in Utero.

Kentucky.

Charles H. Warfield,	Hepatitis.
John P. Harrison,	Analogy of Plants and Animals.
Samuel M. Puckett,	Conception.
Harvey Bradford,	Sympathy.
Benjamin F. Bedinger,	§ Bil. Remg. Fever, of Kentucky, in 1818.
David J. Ayres,	Sulphur.

Tennessee.

William R. Rucker,	Hepatitis.
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Ohio.

Cyrus W. Trimble,	Hydrocephalus Internus.
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*Louisiana.***James J. Crosby,**

{ Medical Topography of Louisiana.

*Missouri Territory.***Hardage Lane,**

{ Tobacco Injections in Cholica Pictonum.

*Ireland.***John Cullen,**

Inflamed and Indolent Ulcers.

Annual Commencement in the University of the State of New-York.

Agreeably to a late resolution of the Honourable the Regents of the University of the State of New-York, the annual Commencement for the purpose of conferring the degree of Doctor of Medicine in the College of Physicians and Surgeons, in this city, was held on Tuesday last, the 6th of April, 1819. The exercises took place in the New-Hall of the University in Barclay-street, and were honoured with the presence of a numerous and respectable audience, among whom were observed the Reverend the Clergy, the President, Professors and Trustees of Columbian College, besides the Trustees, Professors, and other immediate officers of the Medical School, and former graduates of the institution. Conformably to the decision of the Regents of the University, the degree of Doctor in Medicine was conferred on the following *seventy-six* gentleman, who had been students of the College; had undergone the several examinations required by its laws, and publicly defended their respective inaugural dissertations. After the

candidates were vested with their Academic honours, the learned and distinguished President, Samuel Bard, M. D. L. L. D. delivered an interesting and pathetic charge to the graduates.

Connecticut.

Samuel Bass,	On Morbus Coxarius.
David W. Olmstead,	Diabetes.

Rhode-Island.

B. H. Colegrove,	{ On the mechanical means of relieving diseases.
Joseph Mouran,	Dysentery.

Massachusetts.

Jesse Smith,	{ State of the Pulse, as a Diagnostic of the Nature of diseases.
Paul Swift,	Secretion of Urine.

New-York.

John A. Abeille,	Les Bains.
Alexander Clinton,	Dysentery.
Abraham I. Duryee,	Hare Lip.
Richard Esselestyne,	Infantile Remittent Fever.
Joshua Fanning,	Cruritis.
William P. Forster,	Rhus Glabrum.
William Humphrey,	Phthisis Pulmonalis.
John James,	Strictures of the Urethra.
Benjamin R. Kissam,	Vision.
Daniel L. M. Peixotto,	Insanity.
Daniel A. Robinson,	Wounds of the the Femoral Vein.
Garvin L. Rose,	Hepatitis.
Matthew Stevenson,	Ophthalmia.
Ashbel S. Webster.	Pertussis.
John I. Wheeler,	Consumption.

New-Jersey.

William Boyd,	Phthisis Pulmonalis.
Isaac W. Canfield,	Worms.
Charles Clement,	Sympathy.
John Demarest,	Dropsies.
Charles E. Ford,	Progress of Surgery.
William Forman,	Dysentery.
Stephen Hedges,	Angina Pectoris.
Elam V. Meryhew,	Erysipelas.
Henry Perrine,	Hæmorrhoids.
John P. Schenck,	Inguinal Hernia.
John V. D. Voorhees.	Diabetes.

Pennsylvania.

John W. Gloninger,	Pneumonia,
William W. Baker,	Digitalis in Dropsy.
James Eddy,	Insanity.
Vincent C. Marshall,	Cholera Infantum.
George G. Tresse,	Cuticular Absorption.
Horace B. Thompson,	Compression of the Brain.

Delaware.

Robert M. Phillips,	Cholera Morbus.
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Kentucky.

Simeon A. Dudley,	Lues Venerea.
John Stout,	Cachexia Africana.

Virginia.

George L. G. Bacon,	Hydrops Abdominis.
John B. Butt,	Inflammation.
George Craghead,	Dyspepsia.
Nathaniel W. Fletcher,	Pertussis.
James C. Harrison,	Conception.
Robert Gray,	Epilepsy.

Edwin Price,
Daniel Tompkins,
Isaac Wilson,

Dysentery.
Icterus.
Hemoptysis.

North-Carolina.

George F. Graham,
Harril Harris,
Harris Loomis,
Joseph B. Outlaw,

Pleuritis.
Fevers of the Southern States.
Dysentery.
Phthisis Pulmonalis.

South-Carolina.

Wesley Brannan,
Daniel P. Bush,
Thomas Lesley,
Henry T. Farmer,
Edwin Gaillard,
Theodore S. Gaillard,
Theodore Gourdine,
Robert H. Goodwyne,
Nathaniel Harris,
Benjamin C. Jones,
William C. Norris,
John A. P. Scott,
Thomas M. Stuart,

Hydrocele.
§ Autumnal Remittent Fever of
South Carolina.
Cold Bathing.
Arthritis.
Cynanche Trachealis.
Intermittent Fever.
Influence of the Passions.
Lithotomy.
Intermittent Fever.
Inflammation.
Cynanche Trachealis.
Hepatitis.
Genius and its Diseases.

Georgia.

David A. Reese,
William L. Riviere,

Emetics and Cathartics.
Neuralgia.

Tennessee.

James M. Brewer,
John B. Hays,
John W. Lide,

Cynanche Trachealis.
Cruritis.
§ Medical Treatment of Urinary
Calculi.

Alabama.

Gideon G. Williams,
John W. Withers,

Fever of Alabama.
Dysentery.

Louisiana.

Samuel W. Packwood,

Influence of Climate.

West-Indies.

D'Jurco V. Knevels,

Animal Poisons.

The degree of Doctor of Medicine in this University was also conferred on Richard Davidson, consulting Physician of the port of New-Orleans; William H. Richardson, Professor of Obstetrics in Transylvania University, Kentucky, and John Vancleave, Physician, Princeton, New-Jersey.

UNIVERSITY OF MARYLAND.

At a meeting of the Regents of this institution, on the 26th day of March, 1819, the honorary degree of Doctor of Divinity, was conferred on the Rev. Donald M'Leod, of South Carolina, and on the Rev. Henry Lyon Davis of Maryland.

At the same time, the honorary degree of Doctor of Physic was conferred on Dr. Samuel Hogg, of Tennessee, and on Dr. Samuel C. Muir, of Alexandria, (District of Columbia,) on Dr. Thomas E. Bond, Dr. William W. Handy, and Dr. Thomas H. Wright, of Maryland.

The Faculty of Physic held its public commencement in the Chemical Hall of the University, on the 5th day of April, when the following gentlemen having complied with the statutes of the institution, received the degree of Doctor of Physic.

Maryland.

Granville S. Townsend,
 David M. Reese,
 John W. King,
 Levin W. Ballard,
 Josiah Marsh,
 George Hughes,
 William Orrick,
 Leonard I. Smith,
 David H. Johnson,
 John J. Hays,
 William W. Magruder,
 George Thomas Martin,
 Jacob Coublentz,
 William B. Vincent,
 Thomas C. Ristau,
 Garret Keirn,
 John S. Scott,
 Robert E. Dorsey,
 Robert Crain, junr.
 Theophilus Hawkins,
 George W. Jameson,
 James Montgomery,
 Joshua Bond,
 Cathell Humphreys,
 Thomas L. Murphy,
 Seth Dashiell,
 Turnor Wootton,

Tetanus.
 De Mania Religiosa.
 Gastritis.
 Phrenitis.
 Cynanche Trachealis.
 Uterine Hæmorrhage.
 Uterine Hæmorrhage.
 { Morbid effects of Mercury, and
 use in Venereal disease.
 Hæmoptysis.
 Respiration, &c.
 Cholera Infantum.
 Phthisis Pulmonalis.
 Pneumonia Typhoides.
 Ecclampsia.
 Inflammation.
 Cholera Morbus.
 { Advantages of theory in Medi-
 cine.
 Nosological Arrangement.
 Intermittent Fever.
 Cynanche Trachealis.
 Cataract.
 Rheumatism.
 De Gastritide.
 { Modus Operandi of Marsh Mias-
 mata.
 De Hæmorrhagia.
 Apoplexy.
 Cataract.

South-Carolina.

Jno. L. Miller,

Cholera Infantum.

Ohio.

William Wood, jun.

Perception.

*Tennessee.***John Waters,****Phthisis Pulmonalis.***Kentucky.***Joel B. Sanders.****Bilious Remittent Fevers.****William L. Sutton,****Absorption.****James R. Gray.****Typhus Fever.***Pennsylvania.***Robert Moore,****Dropsy.***District of Columbia.***James C. Muncaster,****Pnuemonia.***Virginia.***James Agnew,****Puerperal Fever.****William H. Delony,****Bilious Remittent Fever.***** Charles A. Harrow,****De Amaurose.****John C. Cromwell,****Hœmoptysis.**

The following gentlemen received the degree of Bachelor of Medicine.

*Maryland.***Thomas J. Lawrence,****Hepatitis.***Georgia.***Daniel Hook,****Materia Medica.***Virginia.***Joseph Y. Smith,****Amausoris.**

* This gentleman obtained the Medal which the Faculty of Physic offers at each commencement for the best *Latin* thesis.

PHILADELPHIA MEDICAL SOCIETY.

Session of 1818 and 1819.

At the Annual election of Officers, the following gentlemen were elected for the ensuing year:

President—N. Chapman, M. D.

Vice-Presidents— { William P. Dewees, M. D.
 { Joseph Parrish, M. D.

Corresponding Secretaries— { Thomas T. Hewson, M. D.
 { John Barnes, M. D.

Orator—Samuel Jackson, M. D.

Treasurer—Samuel Stewart, M. D.

Librarian—Mr. George G. Tress.

Curators— { Mr. George G. Tress,
 { Mr. James B. Price.

The following gentlemen have been elected Honorary Members.

J. F. D. Lobstein, M. D.

C. N. Belot, M. D.

Duncan King, M. D.

Robert Hare, M. D.

The following gentlemen have been admitted as Junior Members.

Elicuree P. Tadic, Lower Canada.

Horace B. Thompson, Vermont.

Dudley Atkins, Massachusetts.

William Webb, William R. Eaton, William H. Morgan, Alfred Monson, Connecticut.

Francis Colwell, Bela H. Colegrove, Rhode-Island.

George Marvin, New-York.

William Hendric, Samuel Risley, Jonathan Price, New-Jersey.

Charles Wilstack, Joshua M. Wiestlieg, Robert E. Griffith, Jesse R. Burden, John M. Boonheissel, George F. Klingle, William Baker, John T. Irvin, Stewart Kennedy, Isaac Davis, Cornelius

H. Luther, R. Laroche, David C. Skerret, Samuel P. Reese, Joseph Moore, John Sharpless, Francis B. Young, Jacob Hittel, Joseph E. Sorbere, Richard Wilson, James M. Staughton, William A. Davis, Isaac Thomas, Edwin P. Atlee, John H. Irvin, John Paxton, —— Evans, Pennsylvania.

Thomas M. Stout, Robert M. Phillips, Samuel Jordon, Delaware.

Henry Tarlton, Francis Goldsborough, William L. Lambeth, James A. Shorb, Maryland.

William Dew, Mordecai C. Booth, George A. Spiller, Littlebury N. Ligon, John K. Mitchell, James Wheatley, James Weeks, Robert P. Richardson, Waller Head, Robert W. Carter, John N. Butt, John Minge, William F. Gooche, John C. Smith, Edwin Corbin, Richard A. Christian, John T. Ligon, Luke White, James May, Robert C. Bouldin, Samuel W. Washington, William F. Finch, Edmund P. Goodwin, Christopher B. Fleet, John W. Gant, —— Glover, William H. Worthington, George Lineaweafer, Samuel C. Snyder, James W. F. Macra, Samuel L. Good, Turner Shell, Samuel Summers, Virginia.

Robert Hinton, Enoch D. Terrebee, Isaac N. Jones, North-Carolina.

Samuel N. Hamilton, Benjamin C. Jones, John W. Simpson, William E. Norris, George Cuthbert, Hezekiah Rice, Francis Calmes, Andrew Bonner, Isaac Grimball, Edmund Ravenel, Henry Boylston, St. John Phillips, Jacob Schmidt, —— Martin, South-Carolina.

Cyrus W. Trimble, Williams Heaton, Ohio.

Harvey Bradford, John P. Harrison, John C. Boyd, William T. Taliafero, John P. Richardson, —— Pawling, Kentucky.

Alexander M'Call, Wm. J. Johnson, —— Maurey, Tennessee.

Richard H. Randolph, Samuel C. Darley, John Rogers, Andrew Park, Samuel Oliver, Raymond Harris, Georgia.

Joseph Brown, Missouri Territory.

James Cosby, Louisiana.

JAMES P. FREEMAN, Secretary.

ERRATA.

In page 156, line 17 from the top, for "*excrutiating*," read *excruciating*.

— line 14 from the bottom, for "*became*," read *become*.

— line 4 from the bottom, for "*so far*," read *so far*.

157, line 5 from the top, for "*decideous*," read *deciduous*.

— line 9 from the top, for "*pertinaceously*," read *pertinaciously*.

158, line 14 from the top, for "*secretory*," read *secretory*.

169, line 20, for "*solutions*," read *solution*.

179, line 5 from the bottom, for "Dr. *Haggarth*" read Dr. Haygarth

180, line 10 from the bottom, for "*patient's*" read *patients*,

181, line 14, for Dr. "*Trenk*," read Dr. Trent.

note—for "*Ditath*" read *Diath*:

line 10 from the bottom, in place of a †, insert an ?

182, line 3 from the top, dele the , after "point,"

213, line 5 from the top, for "*Danish*," read *Swedish*.

239, line 2 from the top, for "*diseases*," read *disease*.

CIRCULAR.

AMERICAN PHARMACOPÆIA.

NEW-YORK, 28th February, 1818.

SIR,

We are instructed to transmit to you the annexed documents of the Medical Society of the state of New-York, respecting the formation of a National Pharmacopœia. It is desirable that, according to their tenor, they should be submitted to the medical associations throughout the Union; and we invite you to promote this design.

In requesting your co-operation in this important work, we do not wish to conceal its difficulties. The object, however, is of such professional magnitude, and so highly important in a national point of view, that, it is hoped all will unite in the most zealous endeavours to attain it.

You will perceive the necessity of giving early attention to the subject, and also of transmitting to this committee whatever resolutions may be adopted, that they may be communicated to other societies.

In the appointment of delegates it is scarcely necessary to suggest the propriety of selecting gentlemen willing to act, and men distinguished for their abilities and learning. It is particularly proper to impress the importance of these points on the incorporated State of Medical Societies, and others, in the immediate vicinity of the probable places of the meetings of the district conventions, for on these delegates much of the labour of forming the district conventional Pharmacopœias must eventually devolve.

Each delegation should be furnished with a copy of the proceedings of their constituents, attached to their credentials; and each district convention should furnish a general record as evidence of the authority of its delegation.

It is greatly to be wished, that every indigenous article, deserving a place in a Pharmacopœia, should be found in this national work, so as to render it as truly American as possible.

This object will be promoted by an attention on the part of the delegates to such native plants as are most in use in their own vicinity; and in order to identify more exactly the articles alluded to, it would be advantageous to furnish the district conventions with specimens of the same, collected when in flower, and carefully dried between folds of blotting-paper, accompanying them with the local or popular name. Every delegate, on his appointment, will naturally turn his attention to the subject of a Pharmacopœia, and collect such formulae as are in common use in the district of his residence, and which have received the sanction of experience.

If it should be more convenient for any delegation to meet in the convention of either of the districts, other than that in which they are geographically located, it is presumed that no objections can arise from such an arrangement.

It will be highly gratifying to us to learn from the several incorporated State Medical Societies, the several incorporated Colleges of Physicians and

Tennessee.**John Waters,** **Phthisis Pulmonalis.****Kentucky.****Joel B. Sanders.** **Bilious Remittent Fevers.****William L. Sutton,** **Absorption.****James R. Gray.** **Typhus Fever.****Pennsylvania.****Robert Moore,** **Dropsy.****District of Columbia.****James C. Muncaster,** **Pneumonia.****Virginia.****James Agnew,** **Puerperal Fever.****William H. Delony,** **Bilious Remittent Fever.*****Charles A. Harrow,****John C. Cromwell,****De Amaurose.****Hæmoptysis.**

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George Marvin, New-York.

William Hendric, Samuel Risley, Jonathan Price, New-Jersey.

Charles Wilstack, Joshua M. Wiestlieg, Robert E. Griffith, Jesse R. Burden, John M. Boonheissel, George F. Klingle, William Baker, John T. Irvin, Stewart Kennedy, Isaac Davis, Cornelius

H. Luther, R. Laroche, David C. Skerret, Samuel P. Reese, Joseph Moore, John Sharpless, Francis B. Young, Jacob Hittel, Joseph E. Sorbere, Richard Wilson, James M. Staughton, William A. Davis, Isaac Thomas, Edwin P. Atlee, John H. Irvin, John Paxton, —— Evans, Pennsylvania.

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Cyrus W. Trimble, Williams Heaton, Ohio.

Harvey Bradford, John P. Harrison, John C. Boyd, William T. Taliafero, John P. Richardson, —— Pawling, Kentucky.

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Joseph Brown, Missouri Territory.

James Cosby, Louisiana.

JAMES P. FREEMAN, Secretary.

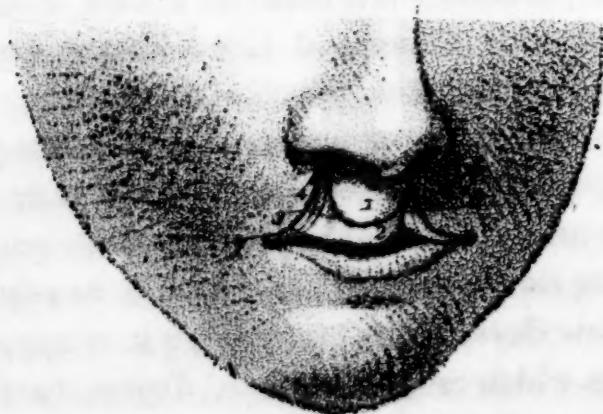
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169, line 20, for "solutions," read solution.
179, line 5 from the bottom, for "Dr. Haggarth" read Dr. Haygarth
180, line 10 from the bottom, for "patient's" read patients,
181, line 14, for Dr. "Trenk," read Dr. Trent.
note—for "Ditath" read Diath :
line 10 from the bottom, in place of a †, insert an ?
182, line 3 from the top, dele the , after "point,"
213, line 5 from the top, for "Danish," read Swedish.
239, line 2 from the top, for "diseases," read disease.

Fig. 2.



Fig. 1.



Double Hare-Lip
By the late Dr. Cathrall.

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